TECHNOLOGY DEPT.

SEPTEMBER, 1950

Flow

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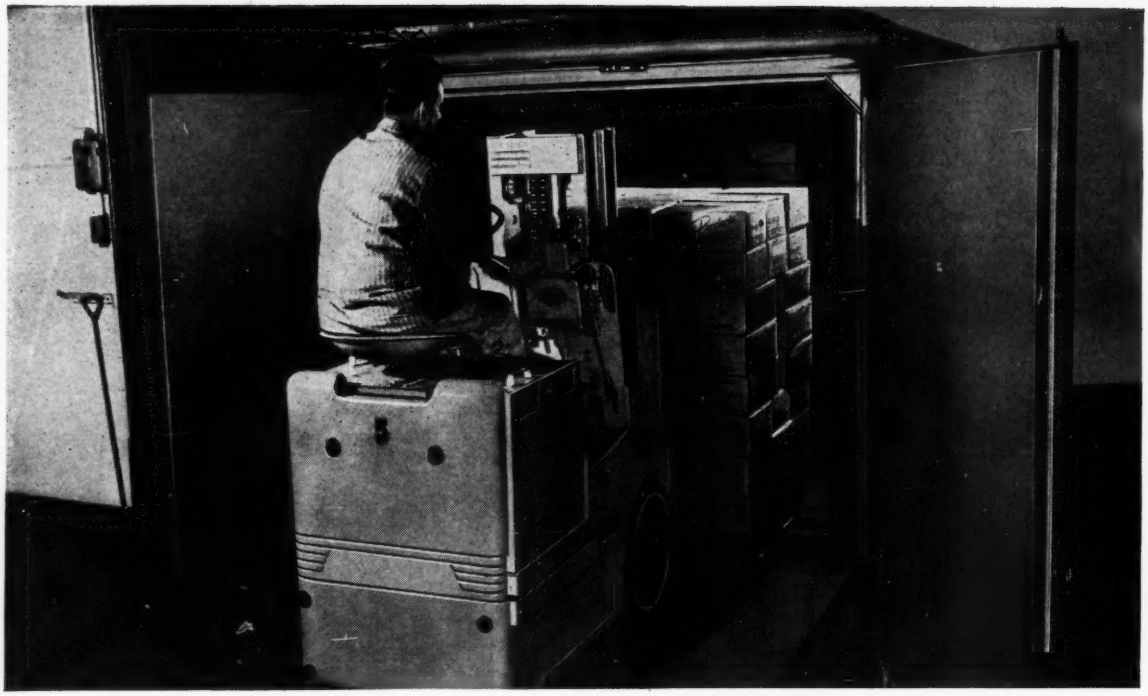
SEP 18 1950
DETROIT

OF MATERIALS THROUGH PROPER HANDLING AND PACKAGING METHODS

IN THIS ISSUE
OLD PLANT...
EFFECTIVE HANDLING

CIRCULATION THIS ISSUE – 29,021

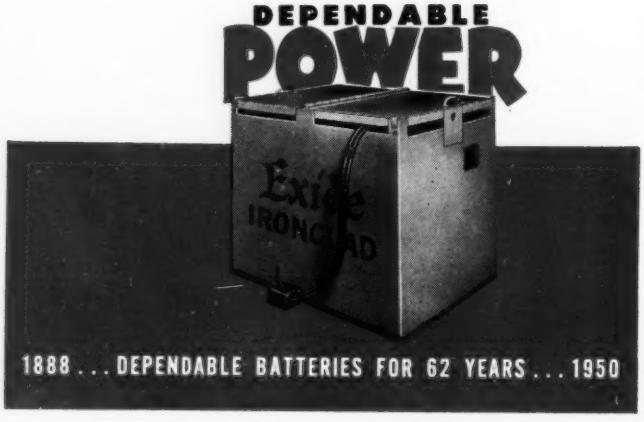


You get Split-second Handling with

Exide-Ironclad battery-POWER

Dependable Exide-Ironclad Battery power is your assurance of finger-tip control, accurate spotting, and steady operation of electric materials-handling trucks. Whether the load is light or heavy, Exide-Ironclads will deliver power instantly to meet all demands typical of *start-stop*, *lift* and *shift* manipulations of materials-handling trucks.

Exide-Ironclad Batteries assure full-shift trucking operations (around the clock or calendar) with no unscheduled periods of down-time to interrupt the flow of materials through your factory or warehousing operations.



The Exide-Ironclad Battery is *DIFFERENT* from all other batteries . . . different in design, construction and performance. The main difference is the Exide-Ironclad positive plate, which accounts for the superior operating characteristics and the exceptional long-life of Exide-Ironclad Batteries in more than a hundred thousand rough, heavy-duty jobs since 1910.

The operating cost of an Exide-Ironclad is low . . . a battery of average size costing less than a nickel per hour to recharge. Maintenance costs seldom exceed fifteen cents per shift. These important factors, together with the exceptional long life of Exide-Ironclad Batteries, provide the lowest cost source of *dependable, full shift* power that can be bought *at any price.*

Write for more facts and FREE copy of Exide-Ironclad Topics. It contains latest developments in materials handling . . . shows actual case histories.

THE ELECTRIC STORAGE BATTERY CO.
Philadelphia 32
Exide Batteries of Canada, Limited, Toronto

"Exide-Ironclad" *Reg. Trade-mark U. S. Pat. Off.*

Circle No. 1 on Reader Service Card for more information

What! YOU MEAN I CAN CUT MY MATERIAL HANDLING COSTS...50% to 75% ?

FREE...8-Question CHECK CHART Tells How You Can!

Answer "Yes" or "No" to the 8 important questions this CHECK CHART asks about the material handling operation in your business.

If you answer "No" to more than 4 of these 8 simple questions . . . you, like so many other business men, will find that "hidden handling" costs are adding excessively to the costs of your product.

Having shown that you are paying too much for handling your material, this money-saver Check Chart also supplies the remedy.

That remedy is Automatic Electric Trucks. They move, lift and stack material with easy, electric finger-tip control. One operator handles more tonnage than three hand truckers.

You may save in man-hours, wages, faster production flow and free storage space, 50% to 75% of the dollars you now spend to handle materials.

See if this Material Handling Check Chart doesn't put the finger on "hidden handling" costs you never knew existed . . . and gain for your business, savings you never thought possible. Mail coupon.

BOTH FREE

With the Money-Saver Check Chart, you get a free booklet: *"How to Make Your Material Handling Pay Dividends."* Gives authentic case histories of money saved on daily Automatic Electric Truck operation. Mail coupon.

Trade **Automatic** Mark
ELECTRIC TRUCKS
Lighten LIFE'S LOADS

Trade **Automatic** Mark
141 West 87th Street,
Dept. P5, Chicago 20, Illinois

Please send me, without obligation, your FREE Money-Saver CHECK CHART, and Booklet: *"How to Make Your Material Handling Pay Dividends."*

Company Name.....

By.....*Title*.....

Street Address.....

City.....*Zone*.....*State*.....

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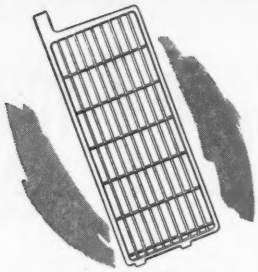
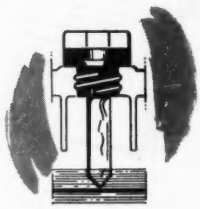


Gould's "Z" Grid is the only completely solid grid. Porosity reduced 85%! 66% more resistant to deterioration!

Regenerative active material. Glass tape and plastic envelope give perfect retention and insulation to "Thirty" Plates.

Here's Why They All Prefer

GOULD-POWERED TRUCKS!



Gould Batteries with Televel Vents show electrolyte level without removal of vent caps. Save time and trouble.

Production, personnel, safety and accounting—*all* prefer Gould-Powered Trucks because they go at full power months after ordinary batteries have begun to slow down. They—

- **Do more work.**
- **Lift, go at same time.**
- **Hug the floor even on high lifts.**
- **Position loads faster.**
- **Are quiet and odorless.**
- **Cut accidents.**
- **Reduce operator fatigue.**
- **Eliminate down-time.**

Power *your* trucks with

GOULD "THIRTY" BATTERIES

America's Finest Industrial Truck Batteries

GOULD

STORAGE BATTERY CORPORATION

TRENTON 7, NEW JERSEY

Always Use Gould Automobile and Truck Batteries

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Flow

FLOW is not the official publication of any group, society or other special interest and consequently its editorial pages are unbiased and undominated.

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AND AIR CONDITIONING

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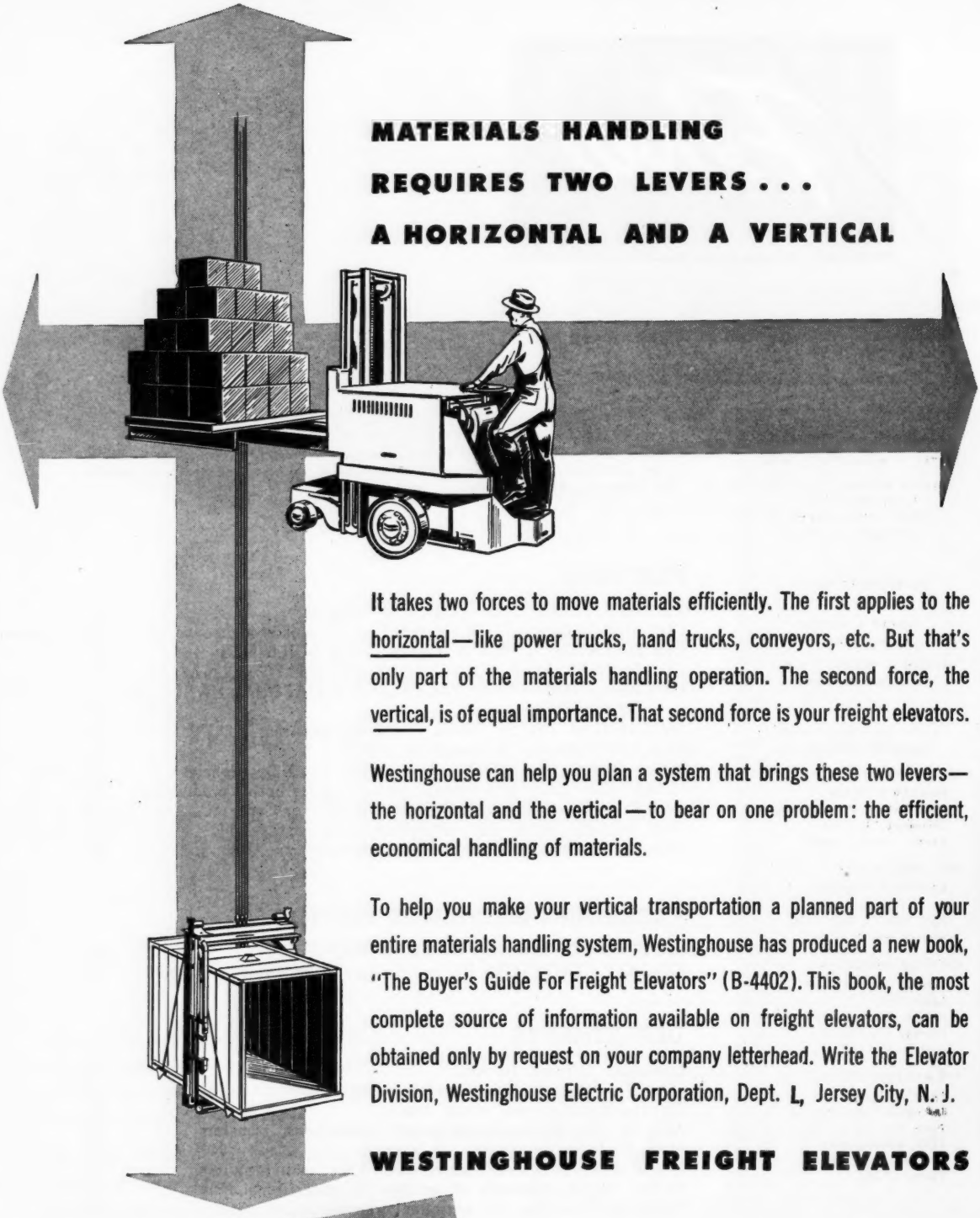

MATERIALS HANDLING
REQUIRES TWO LEVERS . . .
A HORIZONTAL AND A VERTICAL

It takes two forces to move materials efficiently. The first applies to the horizontal—like power trucks, hand trucks, conveyors, etc. But that's only part of the materials handling operation. The second force, the vertical, is of equal importance. That second force is your freight elevators.

Westinghouse can help you plan a system that brings these two levers—the horizontal and the vertical—to bear on one problem: the efficient, economical handling of materials.

To help you make your vertical transportation a planned part of your entire materials handling system, Westinghouse has produced a new book, "The Buyer's Guide For Freight Elevators" (B-4402). This book, the most complete source of information available on freight elevators, can be obtained only by request on your company letterhead. Write the Elevator Division, Westinghouse Electric Corporation, Dept. L, Jersey City, N. J.

WESTINGHOUSE FREIGHT ELEVATORS

YOU CAN BE SURE... IF IT'S
Westinghouse

J-98565

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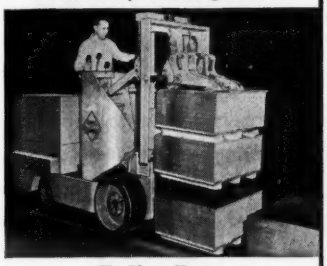
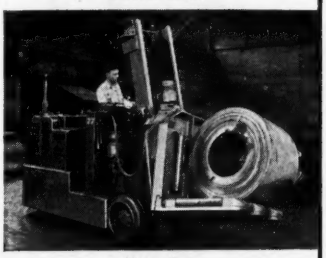
Side Dump Revolving Unit



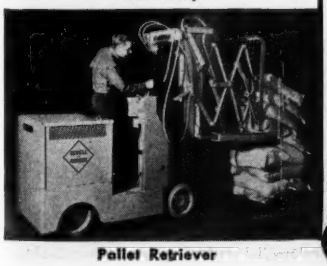
Tin Plate Clamp

Swivel Ram



Upender

Bale Clamp



Pallet Retriever

HAVE YOU CALLED IN *Your Nearest* E-P Man LATELY?

Your Elwell-Parker field engineer has a wealth of *new* material handling ideas and attachments that may be just what you are looking for... his average experience exceeds 18 years ... typical examples of his ingenuity in solving special problems are shown here. So call him direct or send us your request—remember, your E-P man can well be your most valuable friend when you get into a difficult spot in production. The Elwell-Parker Electric Company, 4237 St. Clair Ave., Cleveland 3, Ohio.

DIAL THE E-P MAN TODAY!

Birmingham 3-3323	Kansas City ..VA 7021
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Ft. Worth 4-6184	San Antonio...TR 3653
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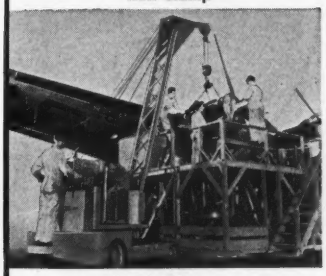
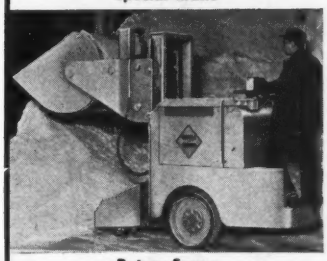
ELWELL-PARKER
POWER INDUSTRIAL TRUCKS
Established 1893

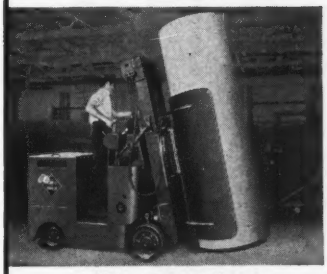
Roll Clamp



Special Crane



Rotary Scoop



Roll Handler with Apron

Drum Handler

Die Handler

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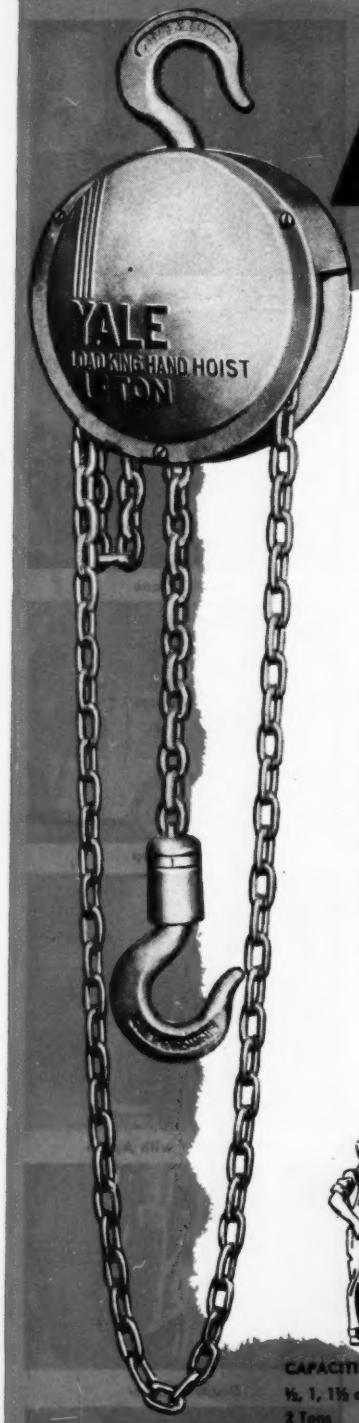
NOW YOURS...



Compact... Lightweight

High strength aluminum alloy castings and alloy steels, fewer parts—these factors provide the "carry-around" lightness of the Load King. The ½-ton model weighs only 37 lbs.! Larger capacities likewise provide unusual lightness for moving the hoist job-to-job in a hurry.

Greater Efficiency

Efficiency up to 95%! It takes only 20 seconds to lift a 1000 lb. load 3 feet. In a minute, 2 tons can be lifted 2.1 feet. Such fast performance is due to minimized friction: *all* rotating shafts have ball bearings, parts are precision machined, and the powerful, revolutionary new Synchro-matic acts quick as a wink.

Easy on Muscles

One-half or 2-ton capacity—the Load King is a one-man hoist! Hand pull force necessary to lift the load is maintained at minimum by its high efficiency. Load King operators save energy, feel better, get more work done per hour. Hoisting costs drop.

CAPACITIES:
½, 1, 1½ and 2 Tons

YALE
TOOLS THAT KEEP INDUSTRY "ON THE MOVE"

SCALES—Industrial • HOISTS—Hand and Electric • TRUCKS—Hand Lift • • • Electric • • • Gasoline • • • Diesel

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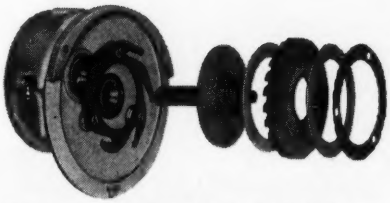
YALE LOAD KING HAND HOIST

...the New Lightweight Hoist with the Revolutionary Synchro-matic Load Brake and every other Performance Feature You Want



You want a compact hand hoist that's easy to move around. You want greater hoisting efficiency to speed production. You want a hoist that doesn't leave the operator droopy and dragged out after a few lifts. You want all these performance features without any skimpiness in quality and durability.

The Yale Load King Hand Hoist gives them to you—and more! For only the Load King employs the new, improved principle of instantaneous brake action provided in the Synchro-matic load brake. Maximum braking power, automatically! A 6-tooth pawl engages a 24-tooth ratchet at 6 points simultaneously with balanced and cushioned spring pressure . . . no side pressure on bearing surfaces . . . longer pawl life. Furthermore, a stabilizer ring gives a soft, even and lighter hand chain pull — speeds brake release for precise inching when lowering a load.

The Load King is a lightweight, powerful, easy-to-use hoist that's really tough—and safe. It has the same rugged stamina that has made Yale Hoists the first choice of industry for more than three generations. Precision engineering, the finest materials, machining to close tolerances, careful tests and inspections — all make the Load King the hoist you can trust to pay off big.

GET ALL THE FACTS

Now is the time to learn all about the new Yale Load King — its powerful Synchro-matic hoisting performance—its attention-free reliability—its enduring quality. Complete information is yours on request. Ask for Bulletin P-1254. Do it today.

PHONE, WIRE OR WRITE YOUR YALE DISTRIBUTOR

MAIL THE COUPON TO HEADQUARTERS
for Bulletin P-1254 and the name of the Yale distributor near you.

WORLD-WIDE
YALE HOIST
SALES and SERVICE
Available Through
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THE YALE & TOWNE MANUFACTURING CO.
Roosevelt Boulevard Philadelphia 15, Pa.

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The Yale & Towne Manufacturing Company
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☐ Send me Load King Hand Hoist Bulletin P-1254
☐ Give me the name of the nearby Yale distributor.

Name .....
Company .....
Address .....
City and Zone ..... State .....

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SPEED UP 100 TIME-WASTING JOBS

LIFT and DUMP
BAGS, BULK, DRUMS

IT LIFTS · IT DUMPS
CESCO
DUMPER

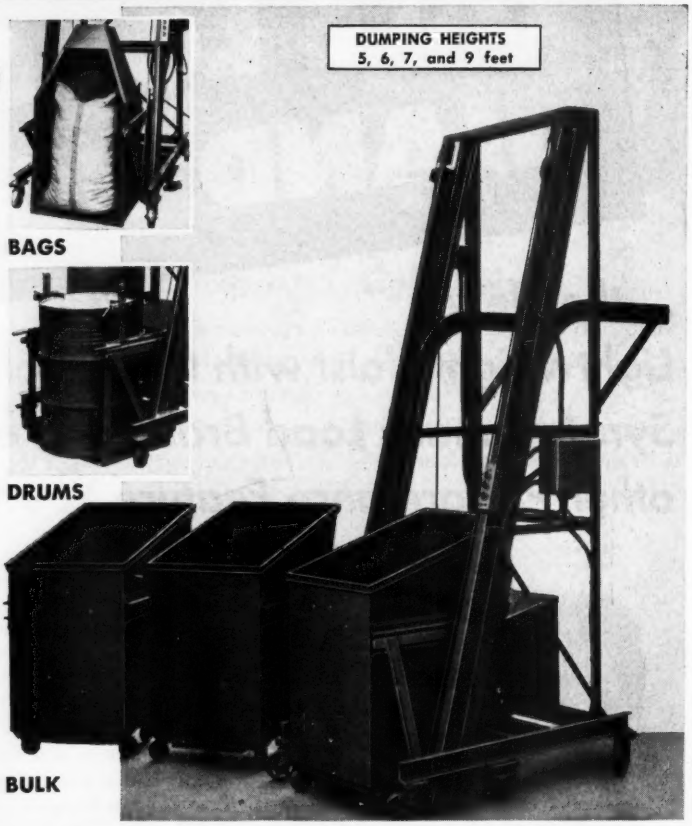
Made in various heights. Locks in place with foot pedal. Dumper and skips roll on casters.

FREE ROLLING SKIPS lock on the arms of the Cesco Dumper for lifting and dumping. They roll on Colson Casters from stock pile to scale to the Dumper and save hours of extra handling.

A variety of skips and loaders are available including: bag dumpers, drum dumpers, dust control types and many others. If you have a handling problem requiring lifting, upending and dumping—it may already have been solved and filed in our Cesco Dumper case histories—write today for information.

BAGS

DRUMS



BULK

ALL KINDS OF MATERIALS can be handled easier and faster by a single Cesco Dumper and its variety of skips. That's why it's just as useful in receiving department and loading dock as in warehouse and mixing rooms. It moves on its own casters and locks in place with two floor locks. It lifts the load by cable and pulley powered by a half horsepower electric motor. Has a lifting capacity of 500 lbs. or 6 cu. ft; can handle up to 50,000 lbs. per hour. Three button control switch —UP, DOWN and STOP—acts instantly and stops the travel without coasting.

Cesco dumpers are made in standard dumping heights of 5, 6, 7, and 9 feet and in other sizes on order. Many special types of skips are made for specialized jobs.

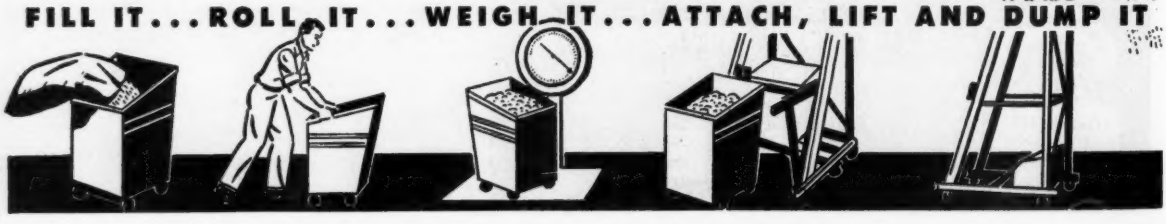
The Cesco Dumper prevents waste by spillage . . . eliminates accidents to labor . . . reduces costs of handling dry materials or liquids in bags, bulk or drums.

COLSON Equipment & Supply Co., 1317 Willow St., Los Angeles

WRITE FOR LITERATURE

Here are eight picture-packed pages showing the various uses of the Cesco Dumper and its mechanical features. Write for your copy today!

FILL IT . . . ROLL IT . . . WEIGH IT . . . ATTACH, LIFT AND DUMP IT



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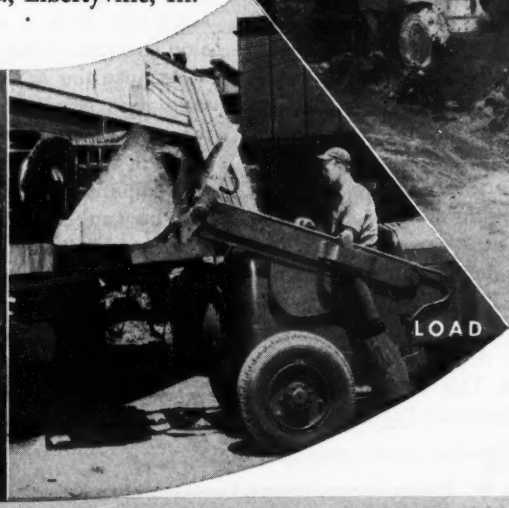
Pick PAYLOADERS

FOR THE *BULK* OF YOUR MATERIAL HANDLING

Payloaders are a proven, successful bulk-material-handling system at thousands of plants. They handle and rehandle all kinds of loose materials, small parts, bags, barrels and bales... eliminate many slow, laborious and costly operations... save time and labor... boost production.

Large pneumatic tires, short wheel bases and multiple speeds in both directions provide traction and maneuverability on or off hard floors, up ramps, through doorways and narrow aisles. It will pay *you* to find out how Payloaders can slash *your* material handling costs. See your Hough Distributor or write The Frank G. Hough Co., 731 Sunnyside Ave., Libertyville, Ill.



Send for catalogs on any size Payloader: the 12 cu. ft. Model HA; the ¾ yd. HF; the 1¼ yd. HL; the 1½ yd. HM. There is no obligation.

SAY HUFF

HOUGH PAYLOADER®

Manufactured by THE FRANK G. HOUGH CO.

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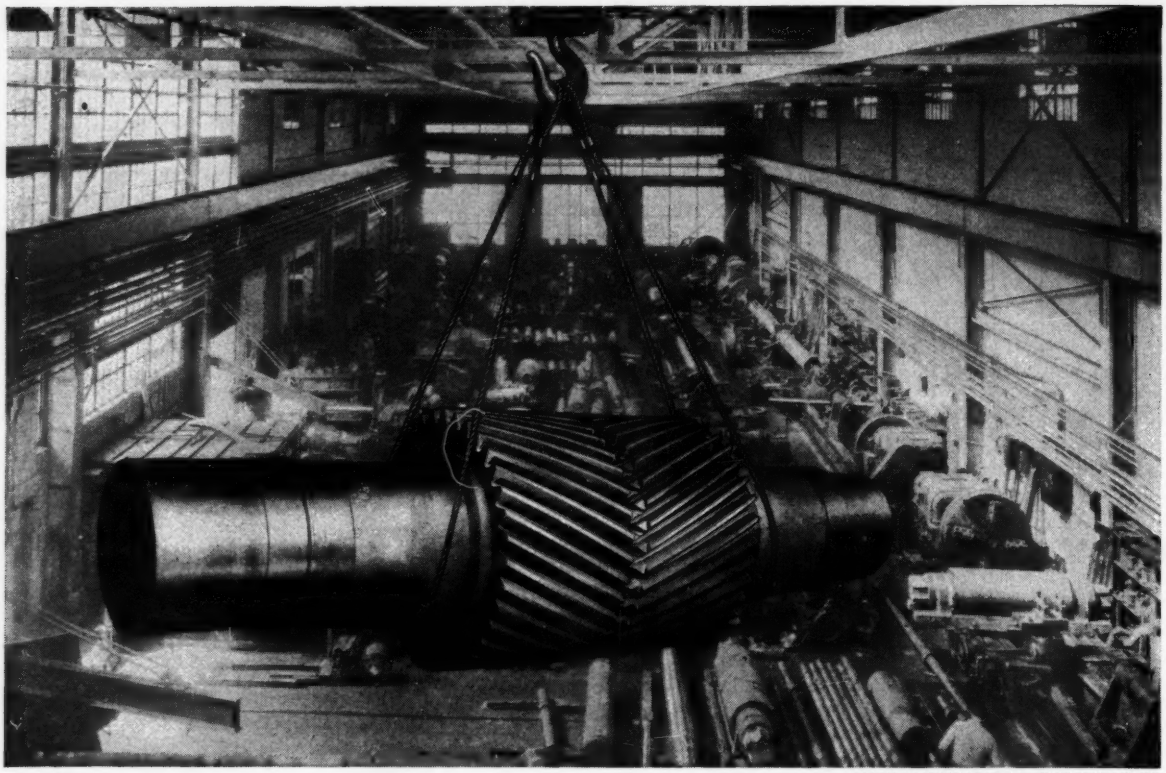

FORGING PRODUCT OF A. FINKL & SONS CO.

How much is safe handling worth?

Apply this formula: ***THE SUM OF A DROPPED LOAD IS EQUAL TO ITS OWN VALUE AND THE VALUE OF WHAT'S BELOW IT****—and you can estimate the worth of safe handling of any load . . .*

● Here for example we have 15,000 pounds of finished machined forging representing hundreds of man and machine hours, costly material, design and engineering time. Added up it's a big investment.. If it fell it could harm itself beyond repair and damage or destroy production machinery. Literally, put a big *DENT* in profits.

Worse still—it could seriously injure workmen. For these reasons good, safe slings—**ACCO REGISTERED WIRE ROPE SLINGS**—are tools worthy of top consideration of both safety and production men.

ACCO Registered Wire Rope Slings provide positive safety factors of 5 to 1. They are factory-made, proof-tested with a load double the rated capacity, then registered. This written and signed Register certifies that only Preformed Improved Plow Steel wires were used and that the ACCO-LOC Splices will develop 100% of the catalog strength of the wire rope.

Because the ACCO-LOC Splice does not disturb wire rope structure, stresses on all parts of the rope are equal. Only the ACCO-LOC has 2 collars on each splice as an extra safety factor. Flexible, easy-to-handle ACCO Registered Wire Rope Slings can be snubbed close and are adaptable to all sling uses, with or without fittings.

Write today *for your free copy of the ACCO Registered Wire Rope Slings "SAFE CAPACITIES" card, which includes a guide for discarding work-worn wire rope slings.*

MEMBER THE NATIONAL SAFETY COUNCIL

ACCO

Wilkes-Barre, Pa., Chicago, Denver, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

AMERICAN CHAIN & CABLE

WIRE ROPE SLING DEPARTMENT

ACCO Registered WIRE ROPE SLINGS

TRADE MARK

In Business for Your Safety

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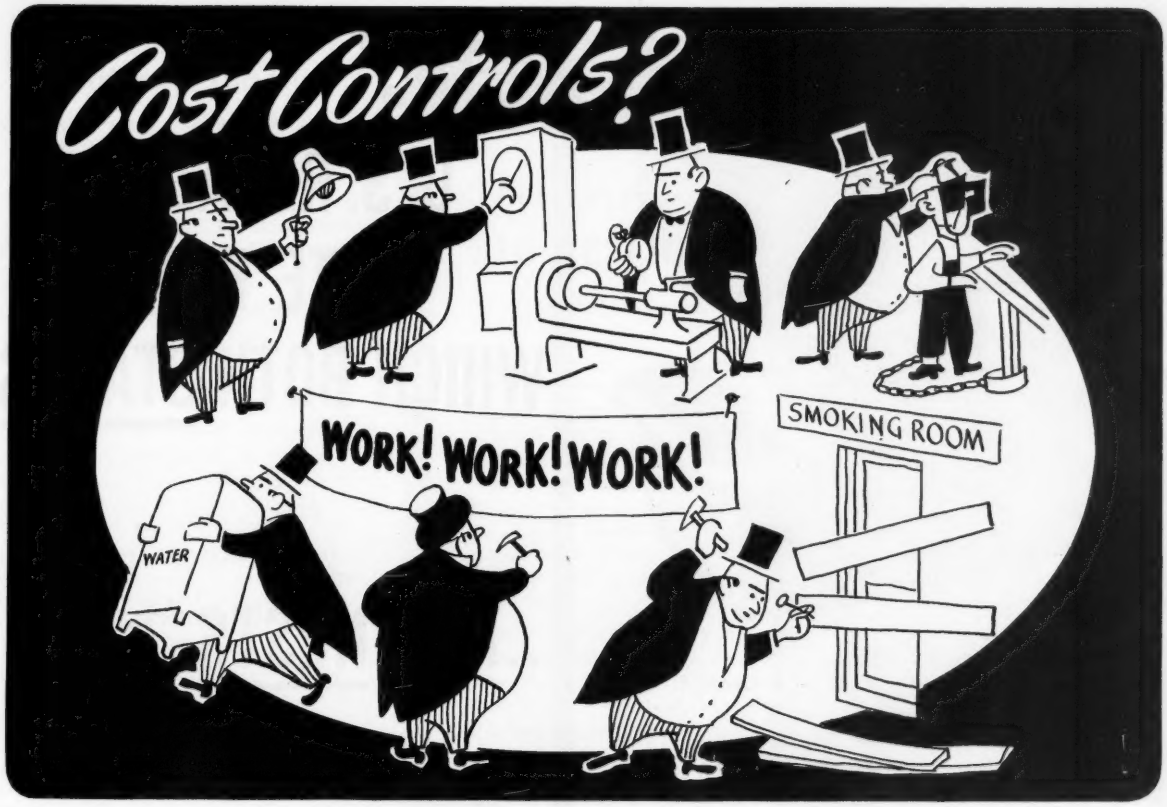
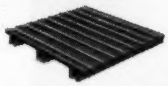
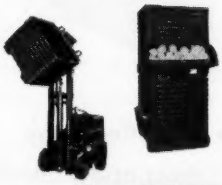


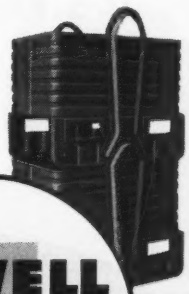




There are many ways of lowering production costs — but, POWELL *PROVEN* MATERIAL HANDLING EQUIPMENT PROVIDES MAXIMUM SAVINGS

TRYING to operate your plant at its greatest efficiency? Then check your materials handling operation. In the average plant, handling of materials and products amounts to more than a third of total product cost. New methods and techniques and Powell ***Job Designed*** containers have slashed excessive costs to a fraction.

For more than 30 years Powell has designed and built the most efficient handling equipment available anywhere, because Powell designs for the job — and at standard costs. Take advantage of this experience. Call in Powell's material handling specialists. They'll be happy to look over your operation at no cost to you. Write today, or get in touch with the Powell representative nearest you. Offices in principal cities — listed in yellow pages of phone directories.



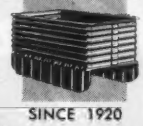
Send Inquiries to Dept. 29

THE POWELL PRESSED STEEL CO.

HUBBARD OHIO

ORIGINATORS OF COLD-FORMED ALL-STEEL HANDLING EQUIPMENT

POWELL
PRESSED STEEL



SINCE 1920

Circle No. 10 on Reader Service Card for more information

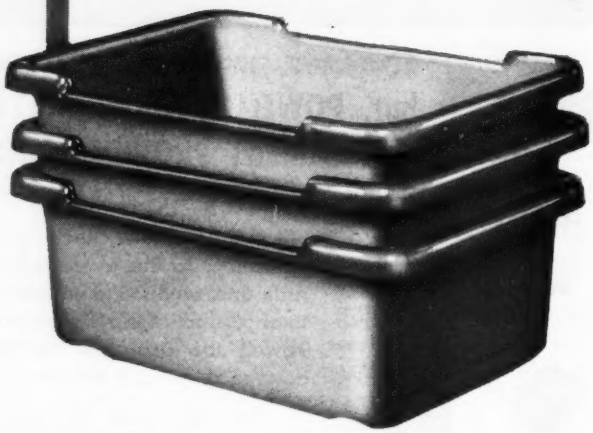
NEW!

U. S. ROYALITE TOTE BOX WHICH BOTH STACKS

..AND NESTS

- ★ SELF-STACKING BOXES— SEE INSIDE AT A GLANCE.
- ★ SELF-NESTING—SAVE STORAGE SPACE.
- ★ NO METAL RIMS, HINGES, WIRES TO REQUIRE REPAIR OR COLLECT DIRT AND RUST.
- ★ MOLDED RIMS GIVE GRIP ON ALL 4 SIDES.
- ★ NO CREVICES TO COLLECT BACTERIA, DIRT OR DUST.
- ★ GREAT RANGE OF WIDTHS AND DEPTHS.
- ★ 4 COLORS FOR FAST DEPARTMENTAL SEGREGATION.

Add to these, the other famous Royalite advantages, and you will see why our new design is widely acclaimed by both employees and management.



U. S. ROYALITE IS...

- Lightweight
- Quiet to handle
- Shatterproof
- Non-splintering
- Non-warping
- Non-corrosive
- Waterproof
- Stainproof
- Not affected by most acids, alkalies
- Odorless
- Non-conductive

u.s. Royalite

UNITED STATES RUBBER COMPANY

Serving Through Science

2638 North Pulaski Road, Chicago 39, Illinois

Circle No. 11 on Reader Service Card for more information

Literature Available From Advertisers In This Issue

(Check corresponding numbers on the enclosed card for the free literature listed below)

ELECTRIC STORAGE BATTERY CO. will send Exide-Ironclad Topics, which contains many material handling case studies.
Circle No. 13 on Reader Service Card

YALE & TOWNE MFG. CO. is offering Bulletin P-1254. It is devoted to the company's new Load King Hand Hoist.
Circle No. 14 on Reader Service Card

COLSON EQUIPMENT & SUPPLY CO. An eight-page brochure shows various uses of the Cesco Dumper.
Circle No. 15 on Reader Service Card

FRANK G. HOUGH CO. Available are catalogs on various models of its Payloaders, powered front-end scoops.
Circle No. 16 on Reader Service Card

AMERICAN CHAIN & CABLE will send its Safe Capacities card, which includes a guide for discarding worn wire rope slings.
Circle No. 17 on Reader Service Card

ALLIS-CHALMERS. Descriptive literature contains engineering data on its Tracto-Shovel mounted on a HD-5G tractor.
Circle No. 18 on Reader Service Card

CLARK EQUIPMENT CO. Information will be forwarded on its new 3000-lb. capacity electric fork truck. Mail the endorsed card for your copy.
Circle No. 19 on Reader Service Card

WESTINGHOUSE ELECTRIC CORP. is offering FLOW readers "The Buyer's Guide For Freight Elevators".
Circle No. 20 on Reader Service Card

ALUMINUM COMPANY OF AMERICA. For complete details on aluminum tote boxes use the enclosed postcard.
Circle No. 21 on Reader Service Card

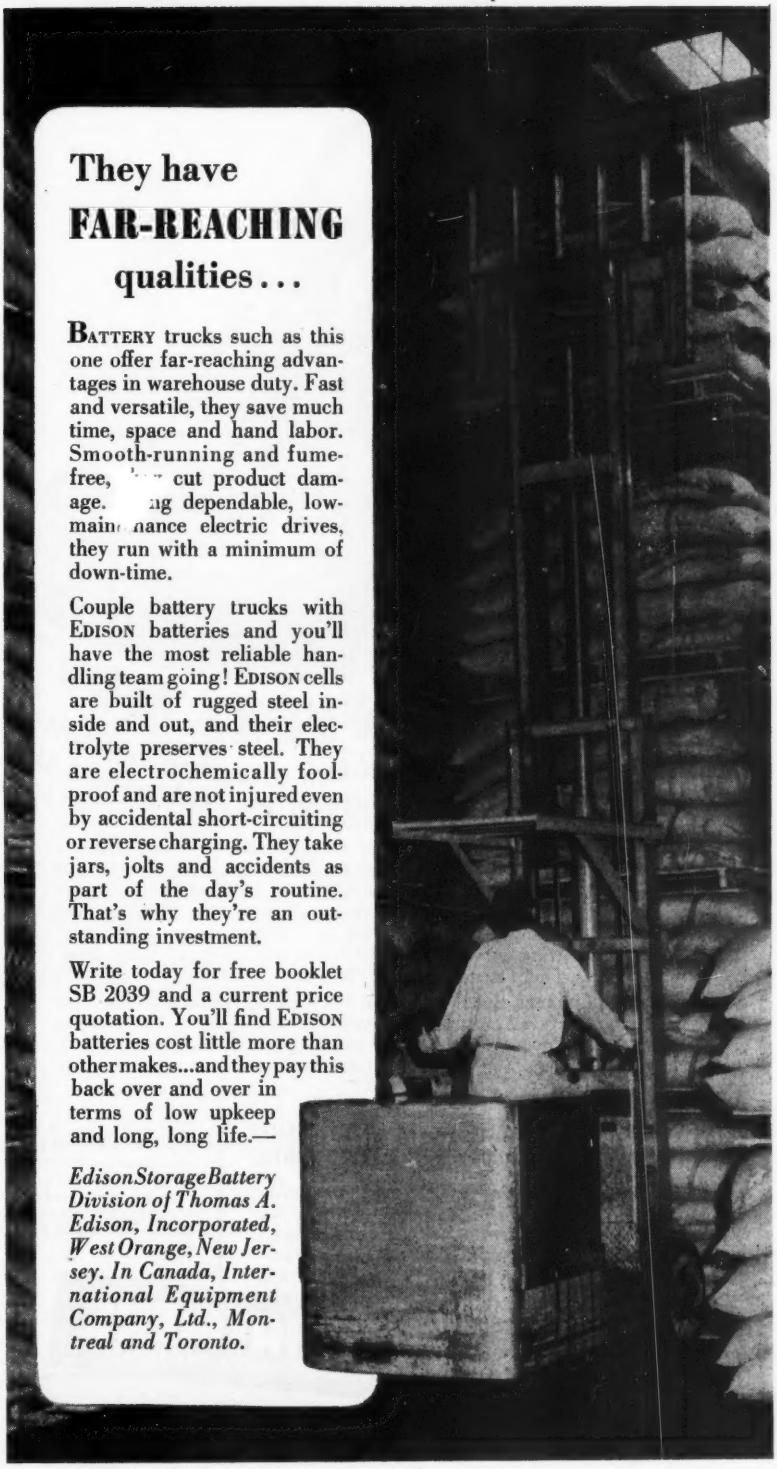
UNION METAL MFG. CO. The subject of fork roll-over, tiering-type dump boxes is discussed in publications made available by the company.
Circle No. 22 on Reader Service Card

AEROL CO. The Aerol Modern Handling Manual offers 355 ways to cut industrial wheel and caster inventories.
Circle No. 23 on Reader Service Card

JOHN ROEBLING'S SONS. This company will forward its wire rope folder plus its "Sling Data Book".
Circle No. 24 on Reader Service Card

LAMSON CORP. is offering complete information on a wide variety of powered and gravity conveyors.
Circle No. 25 on Reader Service Card

TRUSCON STEEL CO. A booklet describes steel pallets and pallet boxes, skids and skid boxes.
Circle No. 26 on Reader Service Card



They have
FAR-REACHING
qualities . . .

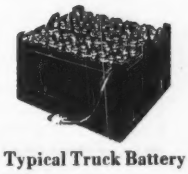
BATTERY trucks such as this one offer far-reaching advantages in warehouse duty. Fast and versatile, they save much time, space and hand labor. Smooth-running and fume-free, [illegible] cut product damage. [illegible]ng dependable, low-maint[illegible]nance electric drives, they run with a minimum of down-time.

Couple battery trucks with EDISON batteries and you'll have the most reliable handling team going! EDISON cells are built of rugged steel inside and out, and their electrolyte preserves steel. They are electrochemically foolproof and are not injured even by accidental short-circuiting or reverse charging. They take jars, jolts and accidents as part of the day's routine. That's why they're an outstanding investment.

Write today for free booklet SB 2039 and a current price quotation. You'll find EDISON batteries cost little more than other makes...and they pay this back over and over in terms of low upkeep and long, long life.—

Edison Storage Battery Division of Thomas A. Edison, Incorporated, West Orange, New Jersey. In Canada, International Equipment Company, Ltd., Montreal and Toronto.

EDISON
Nickel · Iron · Alkaline
STORAGE BATTERIES



Typical Truck Battery

Circle No. 12 on Reader Service Card for more information

Allis-Chalmers
HD-5G
with
Tracto-Shovel

SURE OF EVERY MOVE

. . . Positive control • Fractional-inch accuracy • Load safety —with year-round use, indoors and out

Every move of the Tracto-Shovel on an Allis-Chalmers HD-5G Tractor is under complete and positive control . . . which means load safety at all times. A touch of the hydraulic lever places load right where you want it. Fork or bucket is power dumped or tilted, quickly or slowly, at any height. Automatic tilt-back keeps fork level throughout lifting cycle. Power crowd and downpressure make loading easier . . . help assure capacity loads.

Find out more about the most responsive, the most versatile* tractor-loader ever built. See for yourself how it safely handles big loads, travels over rough terrain, works inside or outside plants — the year around. Ask for a practical demonstration *right at your own plant.*

*** THERE ARE 14 TRACTO-SHOVEL ATTACHMENTS . . . ALL INTERCHANGEABLE IN A FEW MINUTES**

1 cubic yard Standard Bucket
2 cubic yard Light Materials Bucket
3/4 cubic yard Narrow Bucket
1 cubic yard Rock Bucket
Teeth for all buckets
V-type Snowplow
Bulldozer Blade
Angledozer Blade
Lift Fork
Drag Bucket
Trench Hoe
Tine Fork
Rock Fork
Crane Hook

The usefulness of the HD-5G Tractor is further widened by other allied equipment: cranes, skid-loaders, winches, 2-wheel scrapers, rippers and rollers.

ALLIS-CHALMERS
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

ALLIS-CHALMERS Tractor Division, Milwaukee 1, Wisconsin, Dept. F.

☐ Please send me descriptive literature on the HD-5G and Tracto-Shovel.
☐ Please have nearest dealer arrange a practical demonstration at my plant.

Name .....
Company .....
Address .....
City ..... *State* .....

Circle No. 43 on Reader Service Card for more information

CHISHOLM-MOORE HOIST CORP. The CM Catalog contains detailed operating and construction data on its electric hoists.
Circle No. 27 on Reader Service Card

LYON-RAYMOND CORP. will send complete information on its Spacemaker Electric Tiering Truck, which tiers from a six-ft. aisle.
Circle No. 28 on Reader Service Card

ACME STEEL CO. The Acme Steel Notebook contains case studies on the use of steel strapping in many industries.
Circle No. 29 on Reader Service Card

BRUMMELER STEEL CO. Publications are offered dealing with its parts boxes, cooling boxes, and drop-door containers.
Circle No. 30 on Reader Service Card

THE PRIME MOVER CO. is offering an illustrated brochure on its Prime Mover, a powered barrow.
Circle No. 31 on Reader Service Card

WAYNE PUMP CO. A folder gives full operating and construction detail on its industrial hoists.
Circle No. 32 on Reader Service Card

ALL STEEL WELDED TRUCK CO. Its self-dumping truck, L-100, is featured in a new publication. Use the postcard.
Circle No. 33 on Reader Service Card

DETROIT HOIST & MACHINE CO. Bulletin 810 tells the features of its Trojan Tractor for use on monorail.
Circle No. 34 on Reader Service Card

SAMUEL OLSON MFG. CO. INC. is offering details on its wide variety of conveyors and conveyor systems.
Circle No. 35 on Reader Service Card

WISCONSIN MOTOR CORP. For information on its line of air-cooled industrial truck engines.
Circle No. 36 on Reader Service Card

IRONBOUND BOX & LUMBER CO. Bulletin 7-SL illustrates and describes its semi-live skids.
Circle No. 37 on Reader Service Card

LEWIS-SHEPARD PRODUCTS INC. The company's Totemaster, a riding-type flat-bed carrier, is featured in Bulletin No. 30.
Circle No. 38 on Reader Service Card

THE KILBOURNE & JACOBS MFG. CO. More than 95 models of hand and platform trucks are illustrated and described in a catalog.
Circle No. 39 on Reader Service Card

BIGELOW-GARVEY LUMBER CO. will send complete details on its collapsible pallet box.
Circle No. 40 on Reoder Service Card

FLEXIBLE STEEL LACING CO. is offering information on its conveyor belt lacing available in long continuous lengths.
Circle No. 41 on Reader Service Card

HAPMAN CONVEYORS, INC. Folders give data on its pneumatrols for conveying into or our of pressure or vacuum zones.
Circle No. 42 on Reader Service Card

- AUTOMATIC ACCELERATION
- STEERING COLUMN DIRECTIONAL CONTROLS
- "DEAD-MAN" SAFETY CONTROLS
- "NO KICK-BACK" STEERING

EVERY TESTED, PRACTICAL FEATURE DEMANDED BY EXPERIENCED, COST CONSCIOUS

USERS

IS BUILT INTO THIS

Entirely New CLARK *Electric* CARLOADER

3000-lb CAPACITY

- PIVOTED STEERING AXLE ASSEMBLY MOUNTING
- HYDRAULIC BRAKES
- ROLLED STEEL UPRIGHTS
- POWER ECONOMY
- 24-INCH LOAD CENTER RATING
- "HI-LO STACK" UPRIGHTS OPTIONAL

Increased Speed, Capacity . . . .

Compactness . . . Maneuverability

CLARK IS YOUR *BEST BUY*

CLARK ELECTRIC AND GAS POWERED **FORK TRUCKS**
AND INDUSTRIAL TOWING TRACTORS

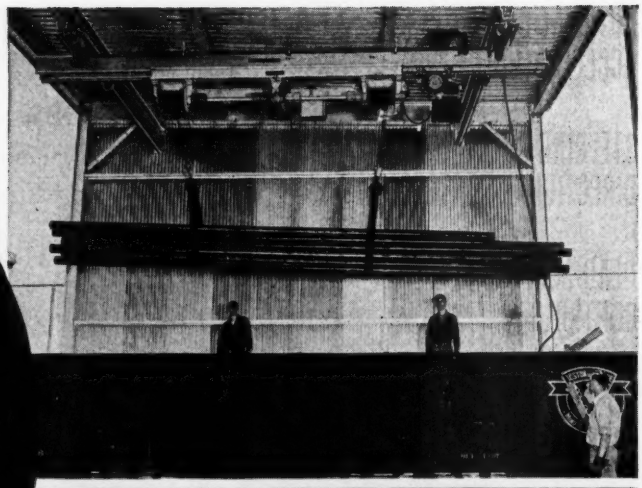
INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 13 S, MICH.
Please send: ☐ Elec-Carloader Literature ☐ Movie Digest ☐ Material Handling News
Name_____
Firm Name_____
Street_____
City_____ Zone____ State_____

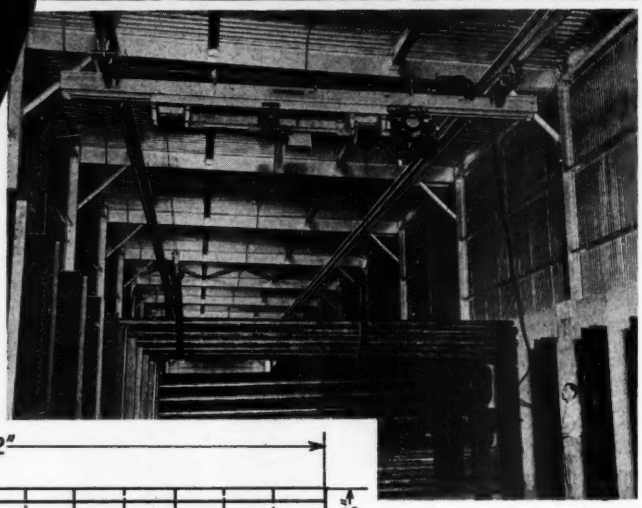
AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

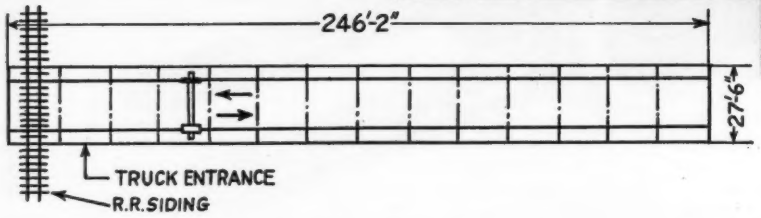
For complete information concerning this important advancement in the science of modern low cost materials-handling, fill in and mail this coupon.

Circle No. 44 on Reader Service Card for more information

SAVES $30 EVERY CAR UNLOADED







Every time a carload of pipe averaging 60,000 pounds is unloaded in their Roanoke warehouse, The Noland Company, Inc., realizes a saving of thirty dollars.

Two men in the car attach flat slings on the twin-hook electric hoist to a load of pipe. By push-button control, the crane operator raises the load to the upper limit. He then dispatches the 2-ton American MonoTractor Crane to any of 13 stations along the 246 foot craneway where it contacts a retractable limit switch and stops.

A man on the warehouse floor takes over control, places pipe in the proper rack, unhooks one side of each sling, pulls the sling through the pipe by raising the hoist hooks. The crane is then dispatched back to the car.

It is estimated that the American MonoRail system will pay for itself in less than a year. With hundreds of similar installations to draw upon, American MonoRail can save you money. We'll gladly send an engineer.

THE AMERICAN MONORAIL COMPANY

13129 ATHENS AVENUE **CLEVELAND 7, OHIO**

Circle No. 45 on Reader Service Card for more information

INVESTIGATE these lighter, longer-lasting tote boxes

Aluminum boxes made by J. M. Gordon Co., Inc., Glendale, California

Whether you're handling foodstuffs, television tubes or screw machine parts, aluminum tote boxes can save you money. Strong, sanitary, they weigh half as much as ordinary boxes. Take half the effort to carry and stack. Aluminum's resistance to corrosion eliminates constant painting and repairs.

You'll like some of aluminum's special features, too. Non-sparking lessens fire hazard. Non-magnetic, important to electronic equipment makers. Steam clean or degrease by solvent or vapor . . . you can't hurt aluminum boxes. And their low cost will surprise you.

For a list of manufacturers who make these better boxes, call your local Alcoa sales office or mail the coupon below to: ALUMINUM COMPANY OF AMERICA, 1985J Gulf Bldg., Pittsburgh 19, Pa.

Gentlemen: Please send a complete list of manufacturers who are making tote boxes of Alcoa Aluminum.

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____

ALCOA ALUMINUM

ALCOA ALUMINUM

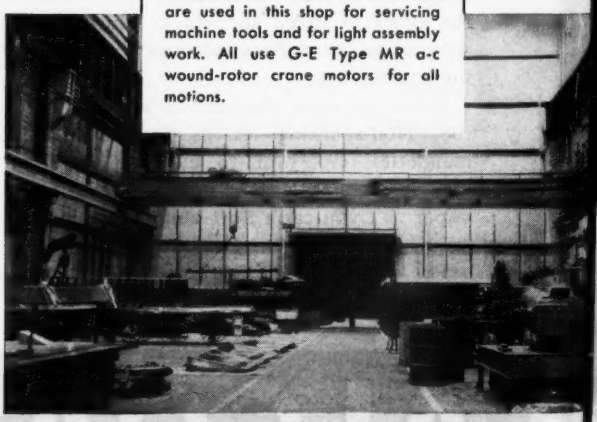
INGOT • SHEET & PLATE • SHAPES, ROLLED & EXTRUDED • WIRE • ROD • BAR • TUBING • PIPE • SAND, DIE & PERMANENT-MOLD CASTINGS • FORGINGS • IMPACT EXTRUSIONS
ELECTRICAL CONDUCTORS • SCREW MACHINE PRODUCTS • FABRICATED PRODUCTS • FASTENERS • FOIL • ALUMINUM PIGMENTS • MAGNESIUM PRODUCTS

Circle No. 46 on Reader Service Card for more information

Spotting loads— 150 tons or 50 lbs. a job for cranes...

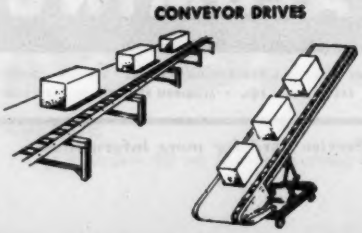
Moving and positioning gigantic pieces like this 150-ton welded frame is a familiar sight at this large factory. Two G-E equipped cranes—a 100-ton and a 200-ton—go into action as the crane follower signals to raise the load.

Worker easily controls this general purpose, pendant push-button operated, machine-shop crane. Several are used in this shop for servicing machine tools and for light assembly work. All use G-E Type MR a-c wound-rotor crane motors for all motions.

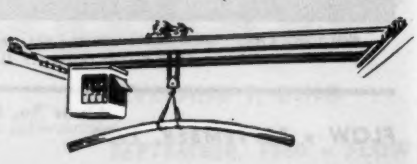


Everything electrical for MATERIALS HANDLING

CONVEYOR DRIVES



CRANE DRIVES



POWERED by G.E.

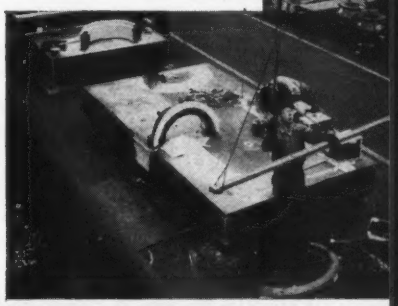
G-E crane-drive equipment gives safe, positive control for all operations from accurate spotting to high-speed lowering. By specifying General Electric equipment you gain the benefits of 40 years' experience in crane electrification. G-E engineers work closely with crane manufacturers in all stages from design to production engineering. See your local classified 'phone directory for a listing of the nearest G-E office. *Apparatus Department, General Electric Company, Schenectady 5, N. Y.*

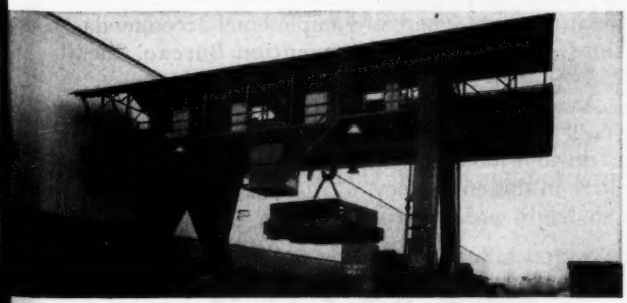
Worker moves a piece of bar stock with the help of a push-button operated industrial hoist. Over 100 of these electrically operated "jib cranes" are used in this plant. These handy installations, equipped with G-E motors, are paying for themselves in speed and efficiency.

SEE the latest techniques and equipment in this new film

As a service to industry, General Electric has produced an unbiased, authoritative movie* covering in detail the latest techniques and equipment in materials handling. Your equipment supplier or G-E representative will make this film available to you and your staff—*without cost or obligation.*

**Part of G.E.'s MORE POWER TO AMERICA program; film is titled "Materials Handling—In Receiving, Warehousing and Shipping."*





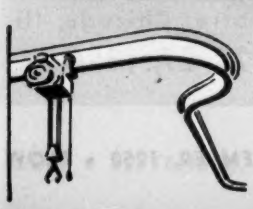
Designed to lift large castings and fabricated sub-assemblies, this 100-ton outdoor gantry is driven by General Electric MD-600 crane motors. Known as the "toughest G-E crane motors ever built," they offer increased overload capacity and greater stability.

100-ton heavy-duty crane with main and auxiliary hooks shown lifting a small casting. The G-E magnetic hoist control on the bridge provides dynamic braking, automatic acceleration and deceleration and correct kick-off torque without cycling, overshooting, or downward drift.

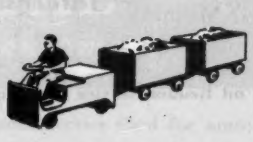
GENERAL ELECTRIC

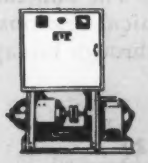
668-80

HOIST DRIVES



INDUSTRIAL TRUCK DRIVES & BATTERY CHARGERS





HIGH PRODUCTION *in an* EMERGENCY

THE METAL INDUSTRY is awake to the need for increased production. It will meet the challenge as it has done in the past.

The 32nd Annual National Metal Congress and Exposition comes at a most appropriate time. At this all-important meeting of the top management, production and engineering talent in the industry, more than 30,000 will be in attendance.

If you haven't already planned to be in Chicago for the Metal Congress and Exposition—do so NOW! You will gain much by meeting people in the industry with similar problems—by seeing first hand what's new and improved to aid you in increasing your production.

This will be one of the most important meetings in the history of the metal industry. Top management men will be able to meet and talk to others—to compare notes, and to gather helpful information that would take weeks to secure in any other manner. And that goes for production men—department managers, supervisors, superintendents and foremen. All will be looking and listening—to get as much information as possible in a short space of time. And time is important right now. Engineers and metallurgists will be there to see what's new in equipment and processes, to examine and learn about structure and properties of new materials, that will fit into their operations and enable them to quickly step up production.

There will be about 400 firms displaying their products and services, with trained men in attendance to answer your questions and explain how they can help you achieve HIGH PRODUCTION.

Four great societies sponsor and participate in the Metal Congress and Exposition.

The American Welding Society will hold technical sessions at the Sherman Hotel, Monday through Friday.

The Institute of Metals Division of A.I.M.E. will hold technical sessions Tuesday, Wednesday and Thursday at the Sheraton Hotel.

The Society for Non-Destructive Testing will hold technical sessions on Tuesday, Wednesday and Thursday at the Morrison Hotel.

The American Society for Metals has a full week—Saturday through Friday—of technical sessions to be held at the Palmer House. "High Production" Sessions will be held at The Amphitheatre. If you would like a complete program of the Metal Congress, write American Society for Metals, 7301 Euclid Avenue, Cleveland 3, Ohio.

Chicago is centrally located and within reach of the entire metal industry. Plan now to attend this great meeting. There are ample hotel accommodations—write Chicago Convention Bureau, Inc., 33 N. LaSalle Street, Chicago 2, Ill.

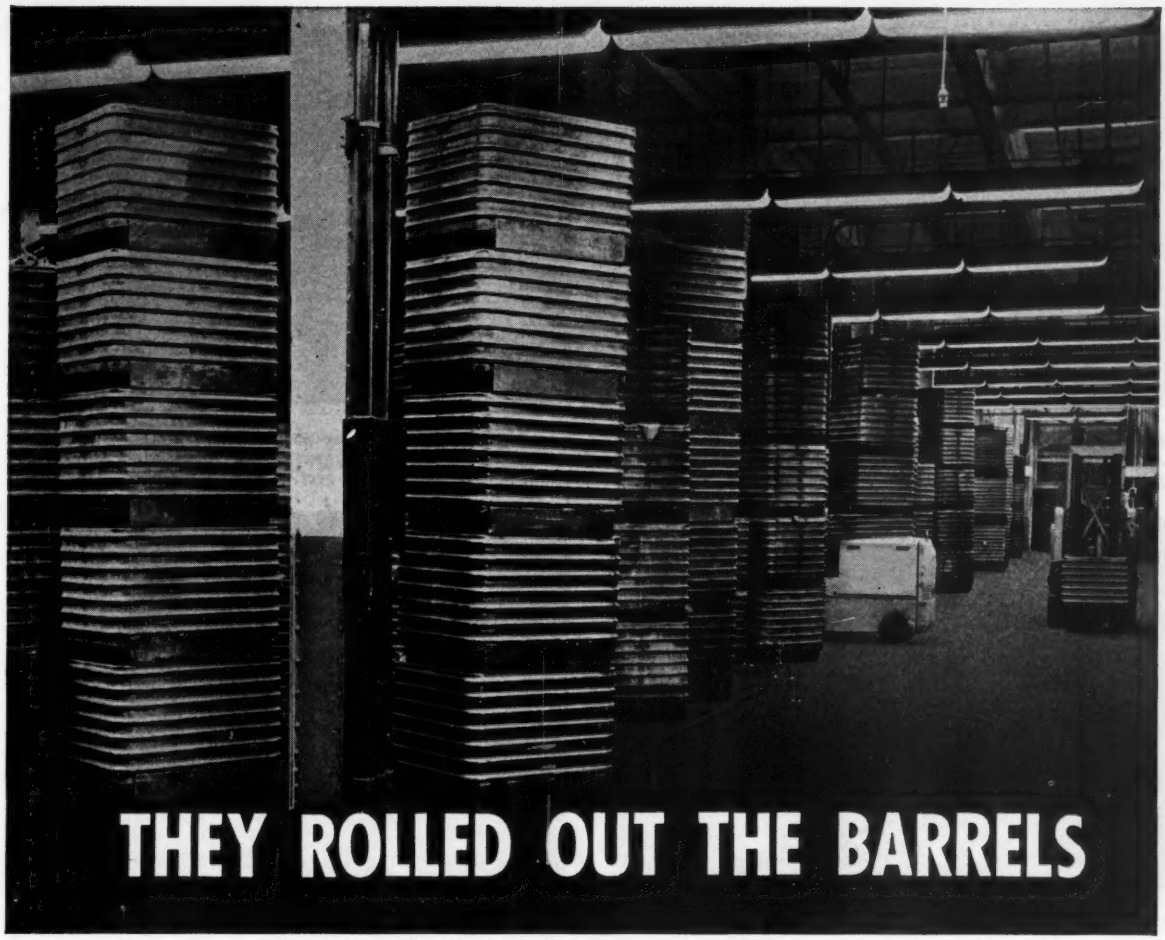
Attend the Metal Congress and Exposition and you'll take back information that will enable you to do your job better and help your company do its share in this emergency.

32nd NATIONAL METAL CONGRESS AND EXPOSITION

International Amphitheatre, Chicago, Ill.

OCTOBER 23-27, 1950

Circle No. 48 on Reader Service Card for more information



THEY ROLLED OUT THE BARRELS

—installed time-and-space-saving Union Metal tiered boxes

PICTURED here is another typical example of how Union Metal materials handling equipment makes important cost savings.

Problem: How to eliminate the excessive time and space waste involved in the manual handling of caster parts and storage in barrels.

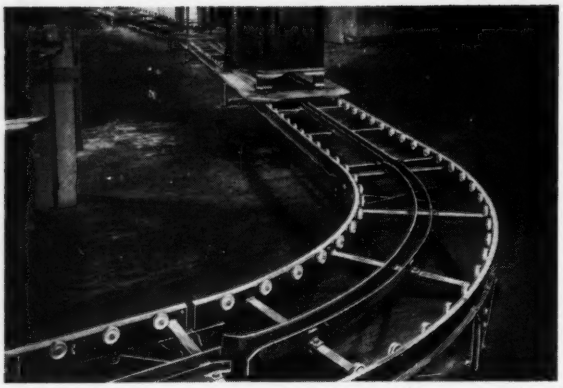
Recommendation: Union Metal's Fork Roll-Over, Tiering-type Dump Boxes.

Results: Speedy pickup and placement of unit loads. Simplified, safe stacking in storage. Roll-over feature empties boxes quickly. Tiering utilizes valuable air space.

Learn more about these and other types of cost-saving units. Write The Union Metal Manufacturing Co., Canton 5, Ohio.

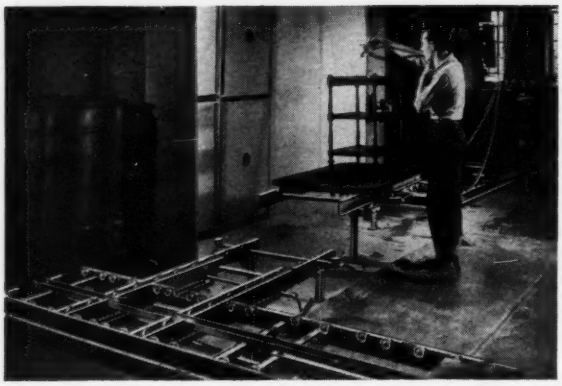
UNION METAL
Materials Handling Equipment

Circle No. 49 on Reader Service Card for more information

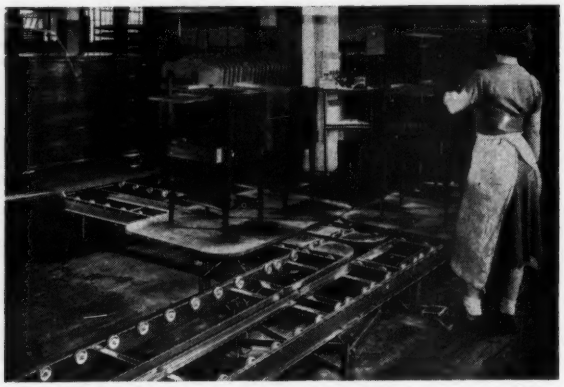


GRAVITY SECTION flows materials down production line on pallets guided by center rails. Timing of pallets placed on line determines general pace.

POWER SECTION pushes pallets along horizontal line or elevates them to higher gravity sections. Motor shuts off when pallets leave power section.



WORK STATION, air-operated, lifts pallet and permits it to revolve like a turntable. Workman's operating time can vary with each piece.



SPUR SECTION moves pieces on and off main line, serves as simple line junction. Switching is done by means of a foot pedal.

New low-cost conveyor gives quality control and variable pace on production line

Here's a radically different approach to production line problems—the new, Guided Pallet Conveyor* system, which permits better quality work, at greater speed, and at lower cost than any previous system.

Well within the budget of any plant, the Guided Pallet system is adaptable to widely varying assembly, processing and finishing operations. Damage to products is minimized and production rate stepped up, because handling duties are eliminated. Traffic congestion is avoided, and work-in-process greatly reduced.

QUALITY CONTROL • At work points, air-lift work station turntables allow pallet rotation for convenient work positioning so that time may be varied as more difficult work comes to the station. This insures fine quality, but keeps production going at average rate of speed with which the line is loaded.

FLEXIBILITY • New layouts can be made easily and quickly, whenever necessary, without costly plant shutdowns. Re-routing is as simple as rearranging a toy train track.

COST • Because the Guided Pallet Conveyor system consists chiefly of gravity conveyors, the cost is less than half that of other types—and installation cost is actually 75% lower!

FURTHER INFORMATION AVAILABLE • Guided Pallet technical information and typical application photographs may be obtained by writing to The Rapids-Standard Company, Inc., 291 Rapistan Bldg., Grand Rapids 2, Michigan.

• ***To determine Guided Pallet application in your plant, consult your Rapids-Standard representative.***

Rapistan® MATERIAL *flow* EQUIPMENT

Advertisement

* PAT. PEND.

Circle No. 50 on Reader Service Card for more information

To FLOW:
Conveyor Belting

We would appreciate very much your sending us two sets of tear sheets of the article "Stitched Canvas Belting," which appeared in your July 1950 issue.—D. E. Perry, Engineering Department, International Milling Co., Minneapolis, Minn.

This three-part article ran consecutively in the issues for June, July and August. The data given were prepared for the information both of conveyor design engineers and belt conveyor users.—Ed.

To FLOW:
Rolling On Casters

I am interested in an article on industrial casters which appeared in the February 1948 issue of FLOW, but have been unable to locate a copy here. I would appreciate it very much if you would forward to me a copy of the issue.—Frederick R. Daume, Major, USAF.

To FLOW:
Fork Lift Truck

Will you advise me who makes the fork lift truck shown on page 50 of the April FLOW. The article title is "Multiwall Bags Loaded By Fork Truck" . . . . Our main need is for horizontal transport and low lift only, with low truck weight. The latter should be well distributed or (widely spread.) Since we have to be careful on account of wood floors, it is my opinion that pneumatic tires are indicated.—Vaughn W. Kerr, Mech. Engr., Clarksburg, W. Va.

To FLOW:
The Directory Again

Please send us any information you have on the Material Hand-

P&S

Materials HANDLING EQUIPMENT

CUSTOM BUILT TO MEET YOUR NEEDS

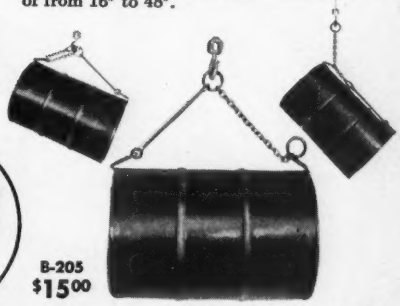
Designed to do Specific Jobs Better

Item J-631 (1000 lbs) $28.90

Item J-632 (1 Ton) $35.55

UNIVERSAL GRAB

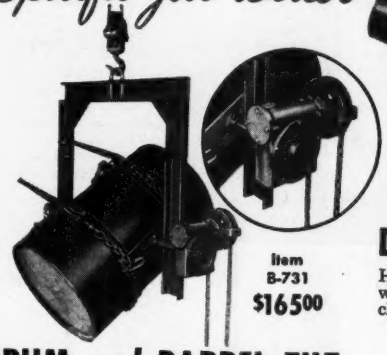
For picking up heavy boxes, crates, bales or other loads where hooks may be used. Heavy, forged steel hooks adjustable spread of from 16" to 48".



B-205 $15.00

DRUM *and* BARREL SLING

Handles barrels, drums, kegs—anything with a lip. Half ton capacity. Heavy welded chain and forged grab hooks. Wt. 8½ lbs.



Item B-731 $165.00

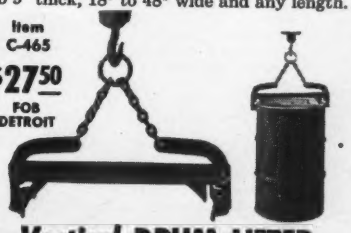
DRUM *and* BARREL TILT

A barrel tilt for controlled, precision dumping or pouring. Ideal for chemicals, solvents, powders, etc. Turns 360° through worm drive. Equipped with two safety type locking devices and all-steel, welded yoke. Hand-operated chain drive.

SHEET STEEL GRAB

Handles sheet steel bundles, any size 0" to 9" thick, 18" to 48" wide and any length.

Item C-465 $27.50 FOB DETROIT



Vertical DRUM LIFTER

For handling open and closed steel drums in vertical position, by crane or hoist. All-steel, with heavily welded chain. Sure-hold safety barrel grip. Saves plant space. Use for either high or low ceiling condition.

BARREL *and* BOX GRAB

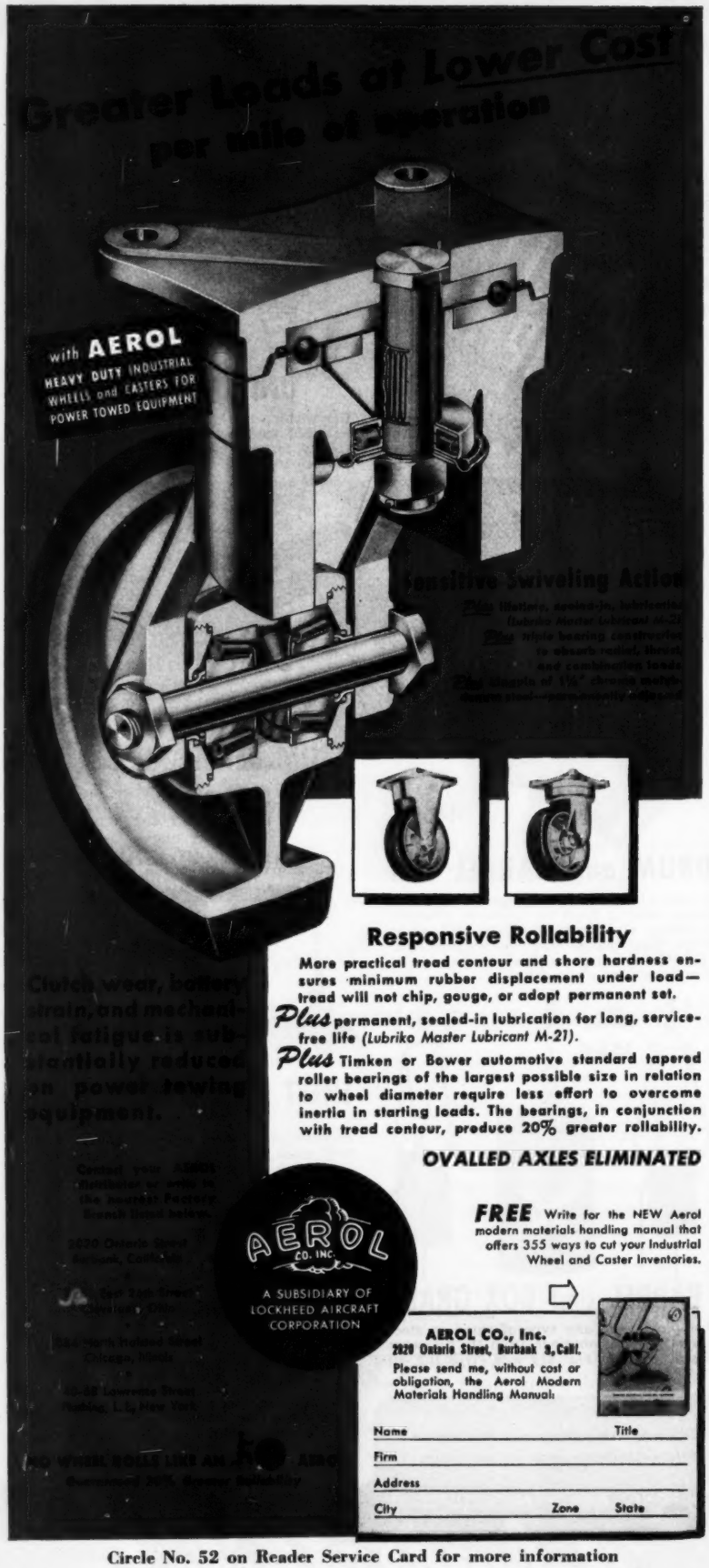
For picking up any type of wood or steel barrel, box or container, from 40" diameter down to small nail keg size. Will lift up to 2000 lbs.

When ordering please give item number. Prices subject to change without notice.

DESIGNED AND MANUFACTURED BY

Palmer-Shile Co.

16012 Fullerton Avenue, DETROIT 27, MICHIGAN


Greater Loads at Lower Cost
per mile of operation
with AEROL
HEAVY DUTY INDUSTRIAL
WHEELS and CASTERS FOR
POWER TOWED EQUIPMENT
Responsive Rollability
More practical tread contour and shore hardness ensures minimum rubber displacement under load—tread will not chip, gouge, or adopt permanent set.
Plus permanent, sealed-in lubrication for long, service-free life (Lubriko Master Lubricant M-21).
Plus Timken or Bower automotive standard tapered roller bearings of the largest possible size in relation to wheel diameter require less effort to overcome inertia in starting loads. The bearings, in conjunction with tread contour, produce 20% greater rollability.
OVALLED AXLES ELIMINATED
AEROL CO. INC.
A SUBSIDIARY OF LOCKHEED AIRCRAFT CORPORATION
FREE Write for the NEW Aerol modern materials handling manual that offers 355 ways to cut your Industrial Wheel and Caster Inventories.
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State
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ling Manual which contains sketches and descriptions of 638 different items on machinery and accessories.—Lester E. Shockley, Tobey Fine Papers, Inc., St. Louis.

The hundreds of drawings in the FLOW DIRECTORY are confined to one section only. A total of eight sections makes up this 483-page publication. The DIRECTORY is an invaluable reference work for the engineer or production executive and a guide for the purchasing agent. $5 per copy.—Ed.

To FLOW:
General Know-How

We are interested in obtaining information and literature on material handling devices, and would appreciate it if you would send us a copy of your magazine FLOW. Thank you for your prompt attention to this matter.—Francis Hekking, Hekking Associates, Inc., New York, N. Y.

To FLOW:
Selling Top Management

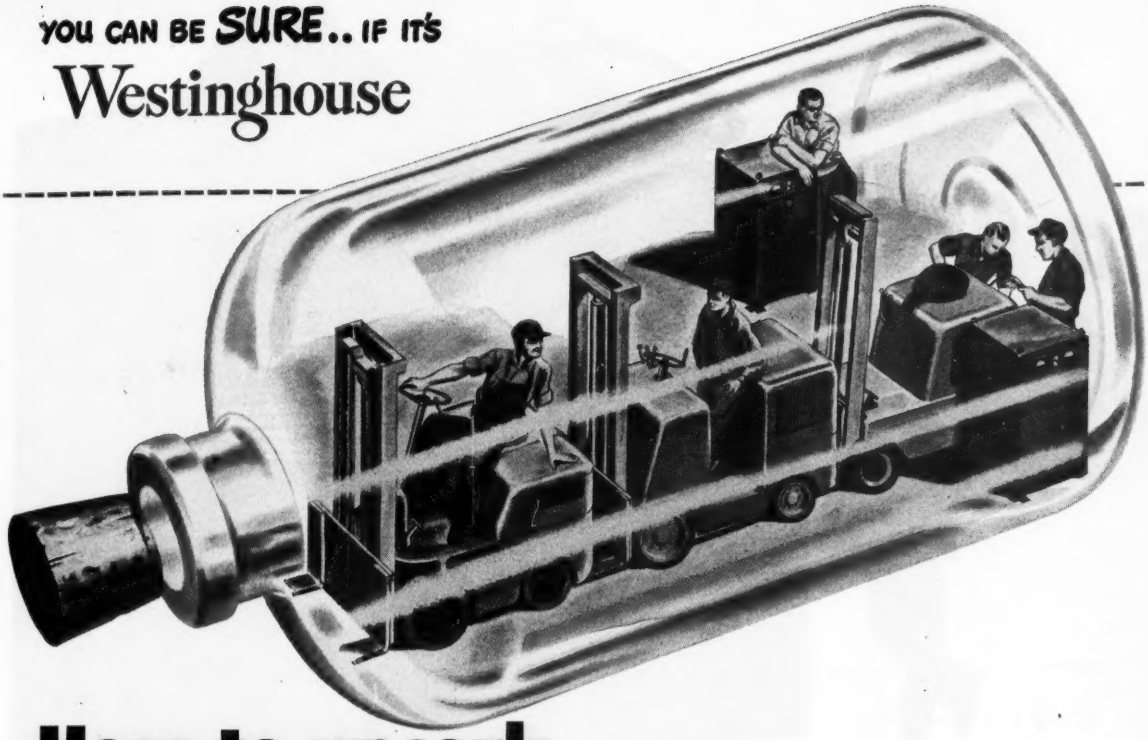
Thank you very much for your letter which accompanied a reprint of your advertisement in the April 5th issue of Wall Street Journal. We would certainly appreciate your sending us 10 copies of this reprint at your earliest convenience.—C. F. Falkner, Material Handling Equipment Co., Indianapolis.

As a service to the industry, the FLOW Publishing Co. is running a series of 12 advertisements in the Wall Street Journal. The schedule was interrupted during the vacation season and is planned to terminate at year's end. Purpose of the campaign is to educate top management to the basic importance of material handling.—Ed.

Use the postcard bound into this issue for more information on advertisements, New Products and Free Literature. Note the number to circle below each item.

YOU CAN BE **SURE**.. IF IT'S

Westinghouse



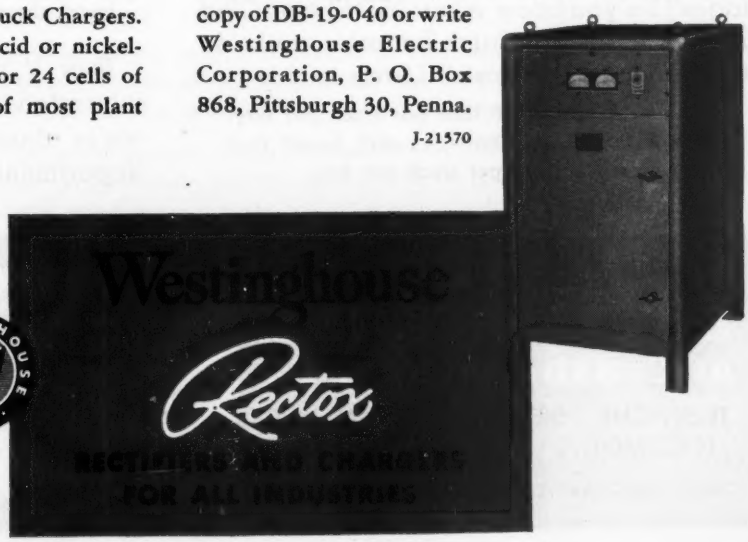
How to uncork YOUR charging bottleneck

Take a number of different-sized trucks with both lead-acid and nickel-alkaline type batteries . . . add a busy plant . . : and you have a charging problem. Trucks wait in line for one particular type of charger while there is plenty of open time on another type. This often is a real bottleneck—and an expensive one.

The problem is solved at the flip of a switch with Westinghouse Rectox Dual-purpose Truck Chargers. Combination units charge either lead-acid or nickel-alkaline type batteries. One rating, 15 or 24 cells of unusually broad range, meets 80% of most plant charging requirements and often 100% of them. Thus, Rectox chargers handle a greater number of trucks; bottlenecks are out. Further, chargers can be placed at strategic truck centers or cross-roads, or spaced at intervals along truck routes.

Do you have a similar problem? Check Westinghouse for an economical solution. Ask your local Westinghouse representative for details and a copy of DB-19-040 or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Penna.

J-21570



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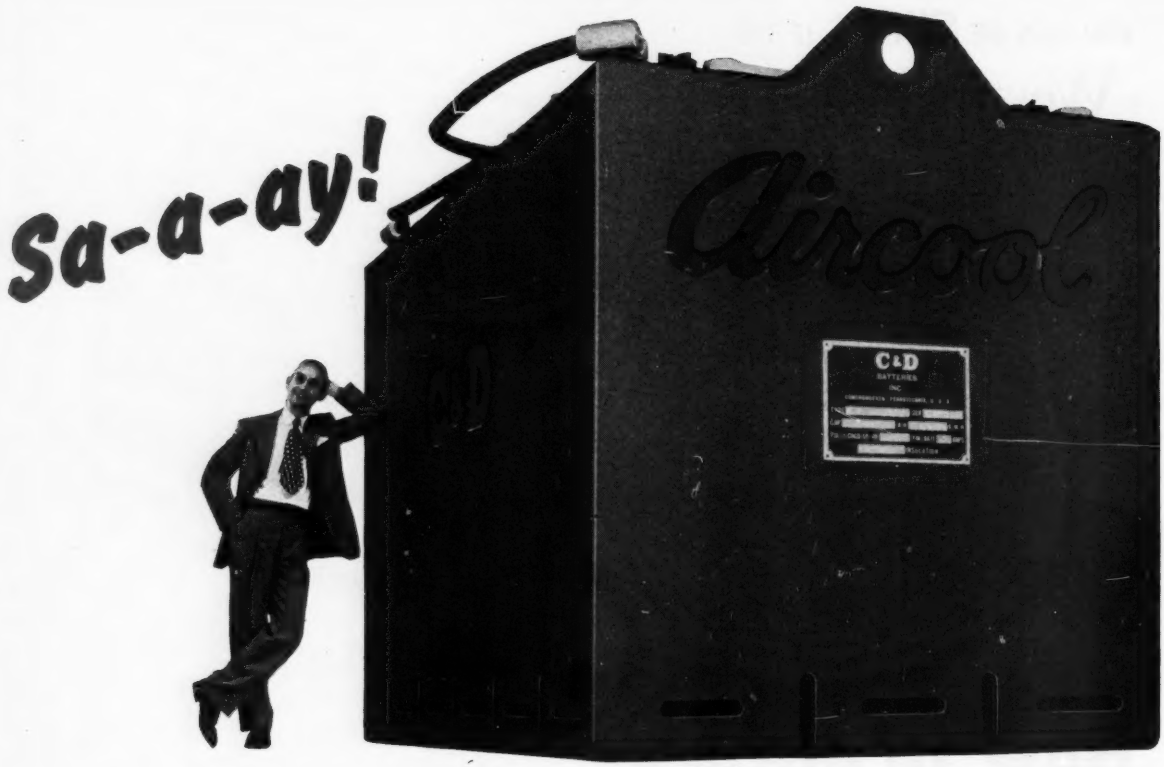

—Aren't you making a BIG THING out of this?

YOU BET WE ARE! Does 20% more power capacity at no extra cost sound big? Is 35% more work-life a big thing? Does a 20%-per-ton saving mean anything?

Why should we soft-pedal such advantages? Do you know what C&D *Slyver-Clad* Aircool Industrial Truck Batteries could do to *your* handling costs? Listen to this . . .

- **If you average 200 tons per truck per day, C&D *Slyver-Clad* Batteries will boost that average to 240 tons per truck per day.**
- **If an ordinary battery "conks out" after 6¾ hours, C&D *Slyver-Clad* Batteries will give you 8 hours before recharging.**
- **If your handling costs run to ____¢ per ton, (you figure it), C&D *Slyver-Clad* Batteries will knock them down a cool 20%.**

Now if you can laugh *that* off, you're interested in cutting profits—not costs. And we're afraid we just can't help you in that department.

C&D BATTERIES, INC.
of Conshohocken, Pa.
TELEPHONE · DIESEL · INDUSTRIAL TRUCK
LOCOMOTIVE · STARTING & LIGHTING
SALES AND SERVICE IN PRINCIPAL CITIES · EST 1906

Who's laughing? I want to know how C&D *Slyver-Clad* Aircool Batteries can help me cut my handling costs.

☐ Send Literature ☐ Send sales representative

NAME.....
COMPANY.....
ADDRESS.....
CITY.....ZONE.....STATE.....

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20 YEARS OLD

THE FACT that our company is 20 years old this month is relatively unimportant to anyone except ourselves. Thousands upon thousands of other companies have become 20 years old, and much older. But to us, the important thing is the way in which this company started, and the way it has progressed these 20 years. Because only in America could this story have been written.

This company started on the ashes of a depression failure. Our first magazine, INDUSTRY AND WELDING, had 24 pages in each issue, of which 3, 4, 5, or 6 were advertising. At 3, 4, or 5 pages, we couldn't pay our printer, but with 6 we could just make it. Whether there were 3, 4, 5, or 6 pages of advertising at no time removed the personal necessity of eating, dressing, and traveling to get the 7th, 8th, and 9th page of advertising. Somehow, we muddled through. In America, you can do those things —with pride.

Many was the time when it looked as though we couldn't make it, and always, when it looked blackest, some miracle would happen and we'd be in business—for another month at least. We stuck. Friends were good to us. People had faith in what we were doing. You find that Americans like to help other Americans who are trying to help themselves. It is the essence of our country, of free enterprise.

No government questioned our right to be in business. No bureau told us what to print or how it should be said. We were free to make whatever profit we could manage and reinvest it in our own business or in any other way we saw fit. That, too, is the American way.

We chose to start magazines in other fields. No one told us what fields to start in or whether we could go into them. As long as we were willing to work and take the beating that every new, small business must take, we were permitted to build our own business in our own way.

These 20 years have been gratifying ones. It has been fun building a business. There's been a lot of hard work, long hours, and various worries, but we're glad we're in the publishing business, because we feel that we have contributed something to industry and to the general welfare of our country. We shall continue to do so. But again we say, ONLY IN AMERICA COULD THIS STORY HAVE BEEN WRITTEN. It is one of our great heritages which, unfortunately, we take for granted, and it's one worth keeping and worth fighting for.

Irving B. Hexter

Irving B. Hexter, Publisher

Walkies and Conveyors Cut Unloading Time in Half

Does your floor-level receiving truck platform pile up delivery vehicles in the "waiting line?" Would extra "mobility" on the rail car platform remedy a vexing bottleneck situation? Is the layout of both receiving facilities no longer adequate for today's heavier tonnage?—Here's how Caterpillar Tractor Co. converted a 20-year-old receiving facility to up-to-date methods with modern handling tools.

MOST large plants with a life going back several decades have the problem of converting old buildings to modernized handling procedures while the production tempo continues at an increased pace. Such a conversion problem is a real challenge to engineering resourcefulness. Older structures are a notorious "hiding place" for costly waste—and by the same token they are also an area where important savings can be achieved.

18" Inside and 30" Outside

An example is in our receiving building for miscellaneous supplies and production materials which arrive in crates, boxes and other containers. One side of the building serves for highway trucks, the other side for materials received by rail car.

The truck receiving department was originally at floor level. As in other industrial plants, some years ago the "unit of handling" was muscle power— a method that was considered adequate while the volume was still relatively small.

A large percentage of today's receivals consists of unitized loads, which are picked up by hand-guided power trucks and transported from the delivery vehicles to location on the receiving floor. While the lighter loads are moved adequately by means of mechanical hand jack trucks, for the heavier ones the powered hand trucks are a satisfactory tool. It should be borne in mind that this is a receiving dock only. Photos on page 30 show why a new ramp and dropping of driveway brought the solution.

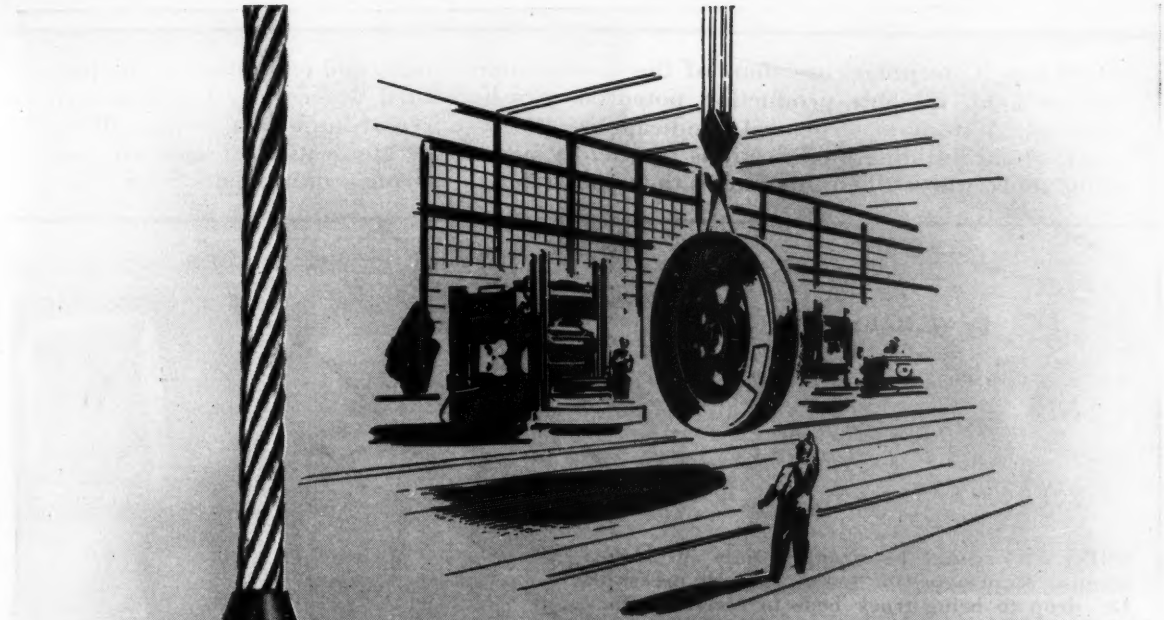
Tonnage production per man-hour was increased considerably in truck receiving, and these further operating improvements were noted. Truck waiting time (with the consequent long waiting line) that was once the bane of this operation has disappeared completely. Trucks are now handled rapidly in this area into which the vehicles are scheduled in an unending flow. And because physical lifting is seldom necessary, the work is easier and work conditions pleasanter.

60% Improvement in Rail Receiving

On the rail car receiving side of the same building, another conversion project illustrates a method for adding "mobility" to a stationary platform. While this operation was more recently supplanted by the

The majority of U. S. plants are in buildings that have served for decades. Yet these same plants must meet today's competition, must produce economically, must do an up-to-date job of material handling.

For the information of its readers FLOW herewith presents a complete issue of "old plants—effective handling." Whether your plant is old or new, you are likely to find more than one profitable suggestion in these specially prepared reports.



THIS SPLICE IS NEWS!

New Roebling All-Purpose Slings with Tapered Sleeve Splice are available for immediate delivery, and they come to you all ready for the job . . . They're a very safe sling to handle; no servings; all wire ends permanently covered!

New Roebling All-Purpose Sling with the Tapered Sleeve Splice

YOU GET NEW SAFETY at less cost with this unique splice. It's cheaper than ordinary tucked splices . . . saves the expense of "splicing your own." This remarkably simple rolled loop and tapered sleeve attachment develop the *full catalog strength* of the new Roebling All-Purpose Sling.

New Roebling All-Purpose Slings with the Tapered Sleeve Splice are made of Preformed "Blue Center" Steel Wire Rope with Independent Wire Rope Core. Their rolled loops are made by passing three strands and the core around the loop in one direction, and the other three strands in the opposite direction. Ends of all wires are permanently anchored in the compact, tapered sleeve.

Roebling All-Purpose Slings are the last word in toughness and dependability . . . offer full flexibility and handling ease. They are available in all standard lengths and sizes. Write for fully descriptive folder . . . and for the "Sling Data Book." In the full Roebling line there's a safe sling for top performance and dollar savings on every lifting job. ***THAT'S WHY***

Today it's Roebling!

JOHN A. ROEBLING'S SONS COMPANY, TRENTON 2, NEW JERSEY

ROEBLING *A CENTURY OF CONFIDENCE*

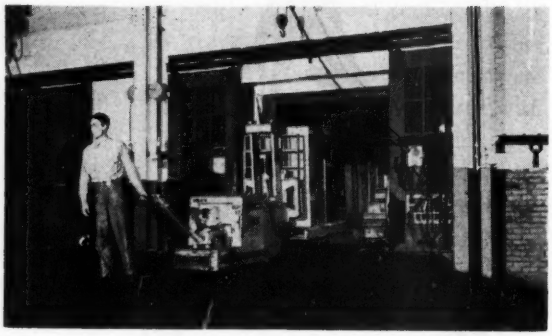
Atlanta, 934 Avon Ave. ★ *Boston*, 51 Sleeper St. ★ *Chicago*, 5525 W. Roosevelt Road ★ *Cincinnati*, 3253 Fredonia Ave. ★ *Cleveland*, 701 St. Clair Ave., N. E. ★ *Denver*, 4801 Jackson St. ★ *Houston*, 6216 Navigation Blvd. ★ *Los Angeles*, 216 S. Alameda St. ★ *New York*, 19 Rector St. ★ *Philadelphia*, 12 S. Twelfth St. ★ *Portland*, 1032 N. W. 14th Ave. ★ *San Francisco*, 1740 Seventeenth St. ★ *Seattle*, 900 First Ave. S.

Circle No. 55 on Reader Service Card for more information

"While 'Caterpillar' has some of the most modern plants and equipment in its particular field, valuable production potentials can be wasted when older buildings are ignored. A study of structural handicaps is often a source of important savings. Relatively slight building modifications frequently permit the application of modern handling tools, whose flexibility makes them adaptable to varying requirements."

By W. NAUMANN,
Production Manager
Caterpillar Tractor Co., Peoria, Ill.

DRIVEWAY could be dropped only 30 inches because of presence of sewer. To get necessary 48" drop to bring truck beds to receiving floor level . . .



18 INS. MORE were made up inside with this ramp. It has a 25 ft. slope for safety. The earlier method was to drag loads from trucks onto portable platform, then hoist them to floor below.

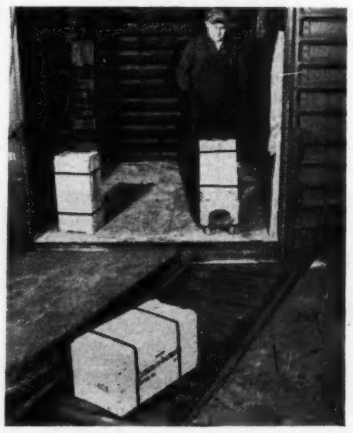
pallet-fork-truck method, the basic idea seems worth describing, for the original situation which we faced is still typical of layouts and conditions in many older buildings. The intermediate solution which we developed and which served our purpose well may be helpful to other plants in which, for one reason or another, a pallet operation is not feasible.

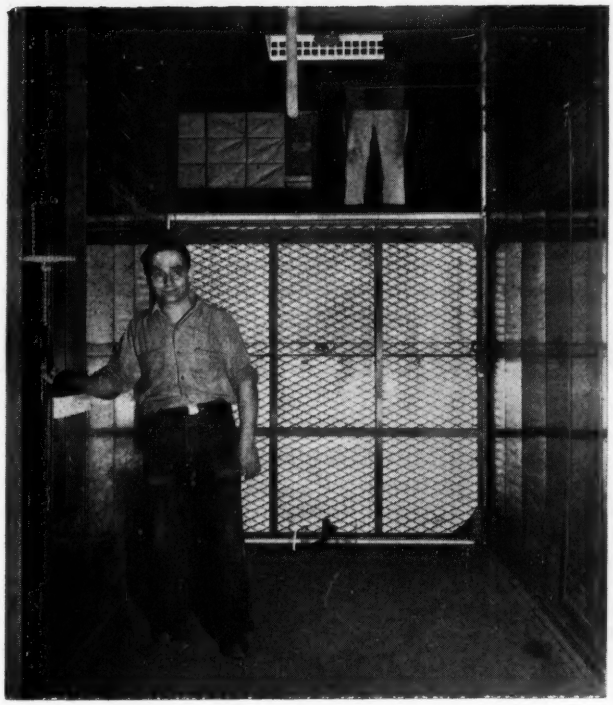
The problem was basically one of putting heavy boxes (250 lb.) on dock trucks and reducing physical exertion and walking. These boxes used to be wheeled out of the cars and then across the length of the platform to a palletizing station inside the building. The length of the average haul was 40 ft.

In order to reduce the man-travel with each box, a gravity roller conveyor was installed as follows. An opening was cut into the wooden floor of the platform and the conveyor installed so that its carrying surface was several inches below the platform level. This clearance was designed for the insertion of snugly fit-

(Turn to page 87)

THIS GRAVITY CONVEYOR gave rail car dock mobility, eliminated miles of walking.





LEFT: ELEVATOR has stopped at third floor of factory building; man's legs visible at rear show third floor level in warehouse. Above: In-process work is being delivered from top floor of the factory to fabricating department.

One Elevator is the Flow Artery for Two Buildings

By GERALD SCANDORE
Manager
Scandore Paper Box Co., Brooklyn, N. Y.

PRIOR to the war, our company, a manufacturer of set-up boxes, operated one of the largest plants of its kind in the east. Shortly before the outbreak of hostilities, the Navy took over our building in anticipation of an expansion program, and Scandore was left with the problem of finding a suitable plant in the immediate vicinity. No single building of comparable size was available, so the management decided to take over two nearby buildings for future operations.

At that time—this was in 1940—the two buildings were not yet joined. There was a gap of about 10 ft. between them. For reasons of "unifying" the property, the gap was closed with a brick partition. The material handling problem with which we were left was of no small proportions.

Practically all inter-floor transportation automatically became inter-building transportation—down in one and up in the other building, usually. There were two small elevators in the six-story concrete building, the factory, and a superannuated elevator in the brick building which serves as the warehouse. The two elevator shafts in the factory were located in the center of the building. This took up valuable production space and aggravated the problem of transporting completed boxes from the factory to the warehouse.

It was not uncommon for boxes that were completed on the fifth floor of the factory to be taken down to the first floor, wheeled across the connecting passage, and then taken up to the fifth floor of the warehouse for distribution to the proper stockpiles. This round-about old method virtually doubled the handling and transportation tasks.

The management realized that the extra manhours thus spent were an added burden on the business, a burden which, in the light of present-day material handling knowledge, was as unnecessary as it was costly. Accordingly, the management ordered a sur-

(Turn to page 44)

OLD PLANTS ... EFFECTIVE HANDLING

Containers May Solve YOUR PROBLEM

By I. J. HAUS,
Plant Engineer and
M. A. TRAVIS,
Asst. Plant Engineer
Nash Motors Body Division, Nash-Kelvinator Corp., Milwaukee

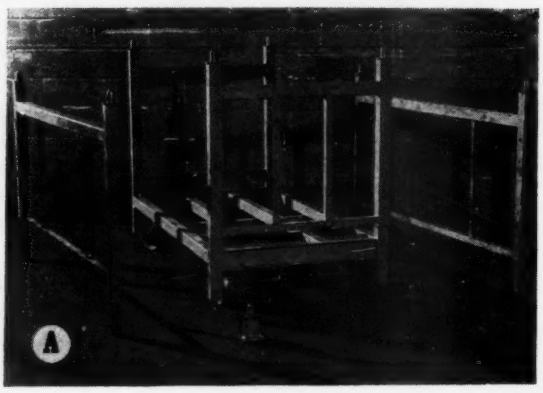
THE problem of converting existing buildings to modern handling is not infrequently one of devising containers which will be suitable for limited floor load capacities on upper stories, and for high stacking on other floor levels. Special work requirements, in this connection, may include adaptability of a standard container to parts of varied sizes and shapes, as well as proper positioning of the work in production aisles.

This sums up the major points of a situation that was remedied at our plant. The Nash Motors Body Division furnishes the completed automobile bodies which are then shipped to our plant in Kenosha, Wis. Hundreds of Nash bodies are shipped daily from Milwaukee on a precise schedule which is integrated with the assembly schedule in Kenosha. These schedules have been stepped up in recent months to the ultimate degree.

Containers Overcome Building Limitations

Some sections of the Milwaukee body plant were built 25 years ago. Upper floor loads and ceiling heights were ample at the time for a more leisurely

Nash Uses Castered



A

STANDARD CONTAINER shown with all components.

B

THIS CONTAINER has frames at sides, not at ends. For better rolling, original 6″ caster size was increased to 8″. Collapsible frames are interchangeable on standard 39″ x 72″ dolly base.

C

IN UPPER-FLOOR fabricating department the individual containers are adapted to limited floor load.

Stacked 16 feet high . . .

production pace and an older concept of material flow. Increased schedules, however, made it essential that considerably greater production be obtained per available square foot of manufacturing space.

We manufacture our stampings in the press room on the ground floor, and the parts are then sent to an upper floor for use in the framing of Nash automobile bodies. The building imposed two major requirements. On the ground floor more area was needed for storage of in-process work. This meant going high, making use of the cube.

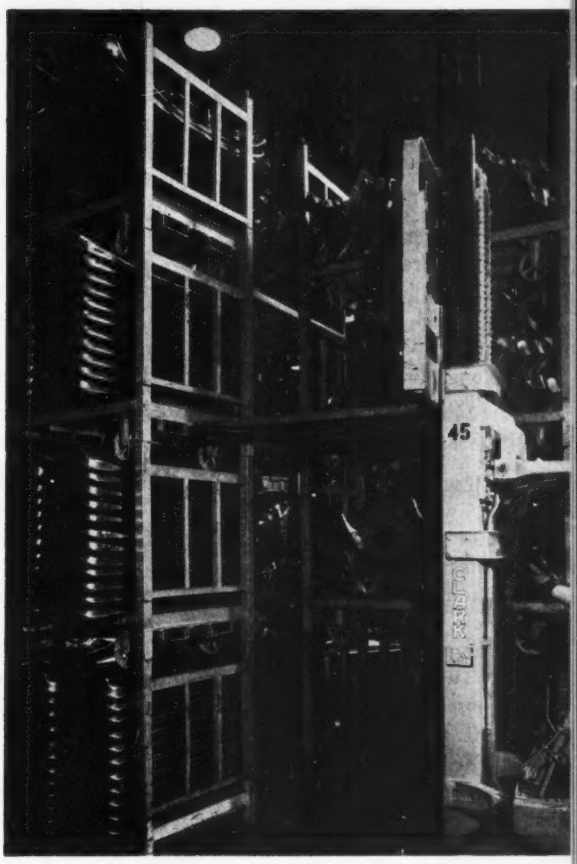
On our upper fabricating floors, the use of heavy power equipment was not possible. This demanded a versatile container which could bring an adequate supply of work upstairs, without creating too much traffic and without sacrificing high stacking on the first floor.

Casters Important In Solution

In order to meet this dual problem, a "standard dolly" rack was developed for high stacking in the ground-floor storage area. The casters that were added to this rack gave the mobility (without power handling) that was required on the upper floors.

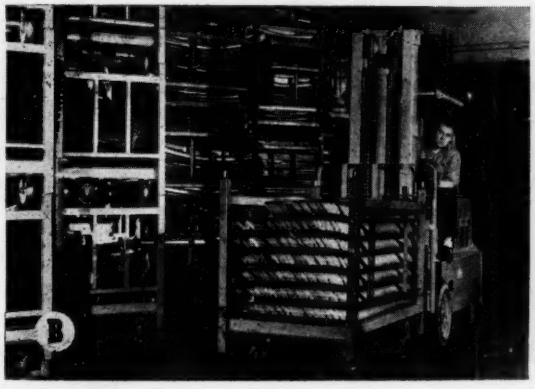
Earlier, before tiering equipment was available in this press department operation, the stampings were stored at remote areas from the press room. The single-deck storage pattern that had to be employed at the time quickly filled up the available spaces. This created the well-known condition of "too much traffic", with the attendant evils of congestion and delays. The situation was aggravated by the growing production volume.

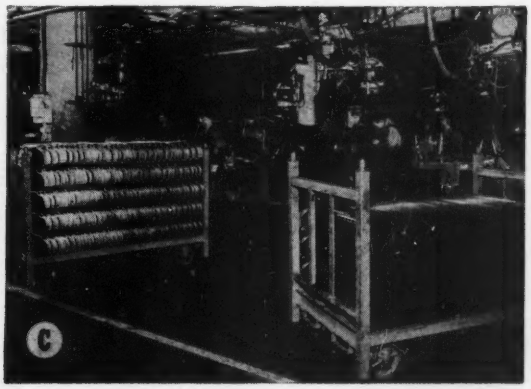
An analysis of the size and shape of the parts was made to answer the question: What type of rack?



FORKS about to enter the stirrups of container. Two are at on end and two in center, for stability of load. Stacking foot, 6 square floor plate, supports the stack, distributes the loa

Racks to Overcome Limited Floor Capacity





Automobile body stampings are large and of complex contour. Nesting was an important consideration in regard to economical use of load carriers (and hence of floor space as well).

Moreover, metal stampings can't be loaded consistently from the same side; they may fall out on the other hide. Because sheet metal parts nest, it may be desirable to load them from one side and unload from another. Special provisions were also necessary for long narrow parts. All this added up to the need for flexibility in a standard container.

Dolly Rack Design Meets Need

These requirements were met by our standard dolly rack, which has several types of square tubing frames that fit on the same dolly base. The racks shown in the exhibits on these pages incorporate several refinements that were developed on the original models.

The press department storage section is a high-bay area with an unlimited ceiling height (for stacking purposes). Here the racks are stored four high, which is 6 ft. to the top of the column.

The mobility given these load carriers by the casters is also an added convenience in production on the ground floor—for example in multi-press operations. A busy fork truck operator may not take the time to spot a load exactly as needed. In such operations, which likewise receive the work in these racks, the press operators can spot the castered loads for maximum convenience in feeding to the machines. Mobility of this kind is ever an advantage.

In the body framing department on the upper floor the loaded racks are manually propelled to location from the elevator, and thus serve as self-contained lead carriers. They have sufficient capacity for adequate supplies of work, thus involving relatively little traffic. Here, too, the factor of mobility means convenience for the operators in the subassembly or final assembly line.

In the words of Plant Manager John W. Weiland, the rack design has satisfied the needs which became acute in the face of increasing production schedules. As a tiering container, it has solved our area problem by utilizing the cube for storage and mechanical means for the fast movement of sizable load units. The same unit becomes a self-contained load carrier on the upper floors. This dual-purpose feature was instrumental in enabling the Nash Body Division in meeting the highest production schedule in its history.

Fifth Annual Industrial Packaging And Material Handling Exposition

THOUSANDS of plant executives and industrial engineers are expected to crowd Philadelphia's Convention Hall for the Fifth Annual Industrial Packaging and Material Handling Exposition. The event which is scheduled for October 10 through 12, is sponsored by the Society of Industrial Packaging and Material Handling Engineers. It is the first time the show has been scheduled for the Eastern United States.

The popular Short Course on packaging and material handling will again be held, this time in conjunction with Community College, Temple University. It will also be held in Convention Hall, but only during the mornings on exposition days. The subject matter to be covered in the sessions was chosen after surveys of the Society's membership by planning committee, headed by W. Gordon Bennet, exposition chairman, and Dean H. C. Rountree of Temple University.

A first for this exposition is the Military Packaging Review which will be held in Convention Hall at 2 P.M. on Tuesday, October 10. Present will be officers from the Air Force, Army Ordnance, Navy and Quartermaster Corps. These officers will present the case for military packaging needs while representatives of industry will discuss ways and means of meeting these requirements from industry's standpoint.

These features add up to one of the year's outstanding expositions—a must for plant engineers, operating personnel and executives.

For Your Calendar:

Place: Convention Hall, Philadelphia

Date: October 10-12

Features: Exposition, Short Course, Military Packaging Review

Fold-Away Magnesium Truck Dock For Confined Areas

By JOHN MILNE,
Superintendent Ferry-Morse Seed Co., Detroit

THE Ferry-Morse Seed Co. is the world's largest distributor of vegetable and flower seeds. Over 1000 varieties are put up in packets and cartons. More than 150,000 shipping pieces containing complete assortments of garden seeds are dispatched from our plant during the season. In addition, hundreds of thousands of cartons and bags are forwarded and received annually.

Problem:

When our buildings were erected many years ago, the six truck docks were designed for the small side-loading wagons which were used at that time. Through the years, truckers have used increasingly end-loading vehicles.

Because our plant is located in the center of downtown Detroit, the loading areas are extremely limited. Since docks were located in confined areas (as shown), it was impossible for trucks to park with ends against the docks. For example, one alley is 28 ft. wide and another only 12 ft. wide. It was therefore necessary to adjust shipping and receiving facilities to accommodate the end-loading vehicles and at the same time increase handling efficiency.

To increase receiving and shipping capacity, a dock was planned for the narrow (12 ft.) alley. This could not be a fixed installation since it would completely block off through traffic. Also, it had to be designed so that it could serve vehicles from both sides.

Solution

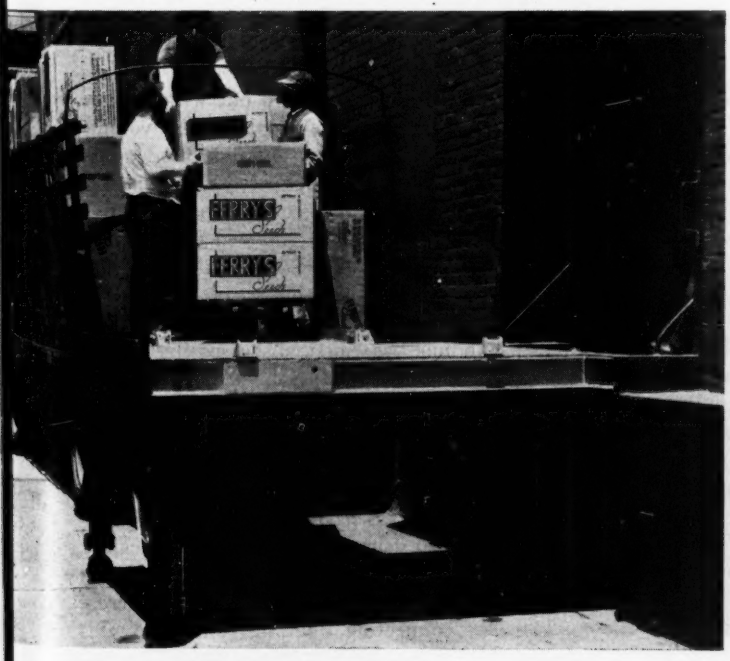
The solution was a 7′ x 14′ magnesium platform resting on a framework which is mounted on two casters. Two lugs on each side of the platform are designed to hold 4′ x 7′ 6″ plates which bridge the dock and the truck body.

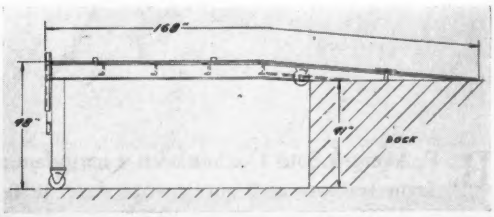
On arrival a vehicle backs down the alley until it is flush with one side of the dock, which is pulled out from its flush position against the building. Since the roadway is open at both ends, the dock can serve two vehicles simultaneously.

When not in use, the dock is rolled back against the building with the caster-mounted legs resting beneath bumpers which extend about one ft. from the building wall. In this way vehicular traffic may move through the alley without obstruction from or damage to the dock. It takes only a few seconds to adjust the dock, which is locked into position with two sliding bolts.

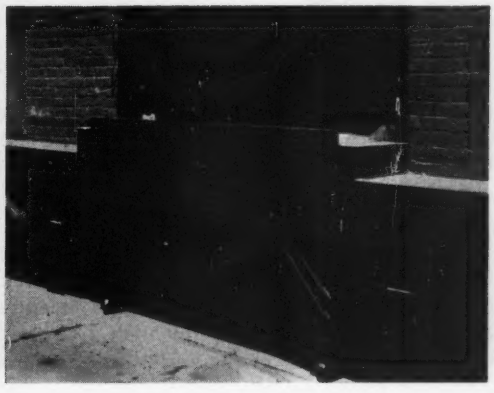
The following benefits are assured. 1. Decreased loading and unloading costs. 2. Faster loading time by approximately 40 per cent. 3. Minimum loading congestion. 4. Increased handling efficiency.

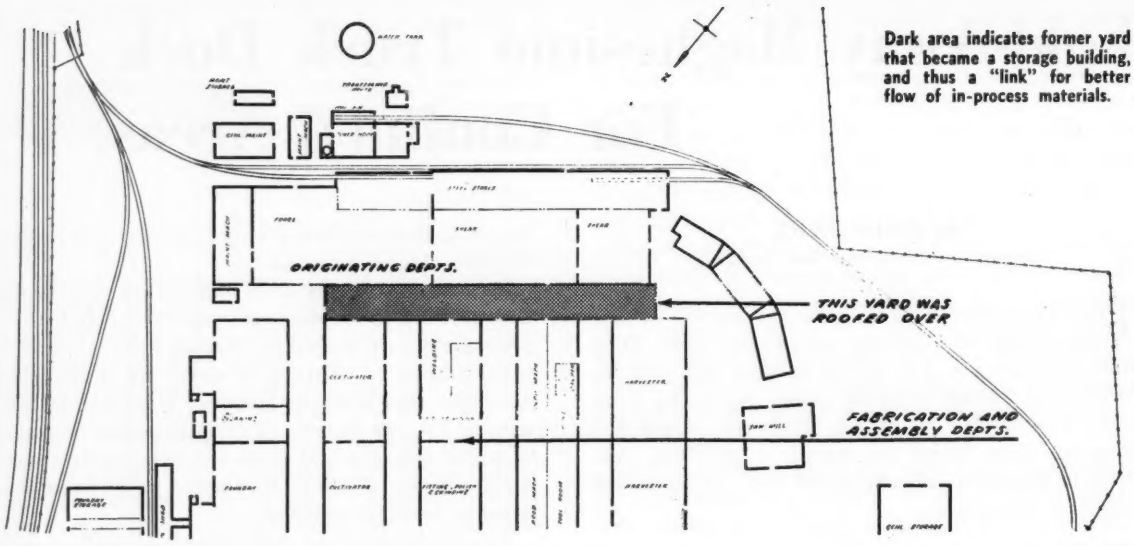
THIS CASTER-MOUNTED MAGNESIUM DOCK bridges the gap between the era of the old-time side-loading truck and today's large trailers—in a 12-ft. driveway. It is rolled out of the way when not in use. See lower right.





MAGNESIUM TRUCK DOCK shown "folded away," to permit through traffic in a narrow roadway.





Dark area indicates former yard that became a storage building, and thus a "link" for better flow of in-process materials.

This Yard Became A Productive Aisle

B. F. Avery & Sons Co. has been a manufacturer of farm tractors and implements since 1830. The present buildings on our extensive grounds (mostly one-story structures) were erected in 1911. We found that the location of several buildings interfered with effective flow of in-process parts and proper control of storage procedures.

A Gap Becomes a "Bridge"

An open yard area, 45 ft. by 440 ft., separated the shear and forge buildings, the originating departments of steel parts, from the fabricating and assembly buildings. A load of parts used to be moved as many as eight times before it finally was delivered to yard storage. The small steel parts, transported on stock buggies, were unloaded at the end of each move, and later reloaded. The purpose was to return stock buggies as soon as possible to the No. 1 operation in order not to hold up new production.

In the yard, many of the parts were stored on the ground. While we originally started out with specific storage areas for all groups of parts, as the volume grew the assigned locations were ignored. Inadequate location and move records complicated the situation. While the operators built stacks of parts in attractive patterns, the parts themselves remained unidentified. This practice brought two full-time expediters into existence. Their job was to trace parts through the factory.

Material handling was first discussed by Avery executives and engineering personnel as a separate function in 1945, and at that time work was started on the integration of the open area between the buildings as an effective unit in the material flow.

The yard area was converted into a "bridge" for a smooth flow of in-process parts between the originating (shear and forge) departments and the fabricating and assembly buildings. This was done by roofing over the 45 ft. by 440 ft. area and laying a concrete floor. The new connecting building thus created is

By A. D. NEAL
Works Manager and
NORMAN LAMBERT
Material Handling Foreman
B. F. Avery & Sons Co., Louisville, Ky.

used as a centralized parts storage building, with systematic procedures controlling the flow into and out of the storeroom.

The one-time yard thus became the "connecting link" between the older buildings, with a pallet-box-fork-truck operation and a two-way communication system.

Role of Castered Dollies

Here is another "old building" idea which may be of value to material handling engineers faced with conversion problems of structures that were not designed for the concentrated loads encountered in fork truck handling. In some cases, our loaded fork trucks cannot enter certain buildings because of floor load limitations. The modernized operation is extended to these areas with the use of castered dollies.

The fork truck operator stops with the load at the entrance, where the tote boxes are placed on 36" square dollies, and these castered load carriers are then propelled to the machining or assembly station. The supply of parts is thus kept mobile and the fork trucks are kept off the weak floors. As many as three tote boxes are thus spotted on one dolly, and by staggering them a few inches the parts in each are made accessible. Loads of finished parts are moved similarly to a point where they can be picked up at the convenience of the fork truck operator.

Our present operation has not only eliminated our former "parts chasers" but has also increased the productiveness of the delivery operation up to 30 per cent. Damage and loss that resulted from our former handling methods are reduced to a minimal point. And the parts are always available when needed.

In short, a yard area with a lot of traffic may well be more useful as a key department when it is *given a roof*. In our case, it has remedied drawbacks stemming from an antiquated layout and parts handling methods, and given us the facility necessary for systematic parts control and effective handling.

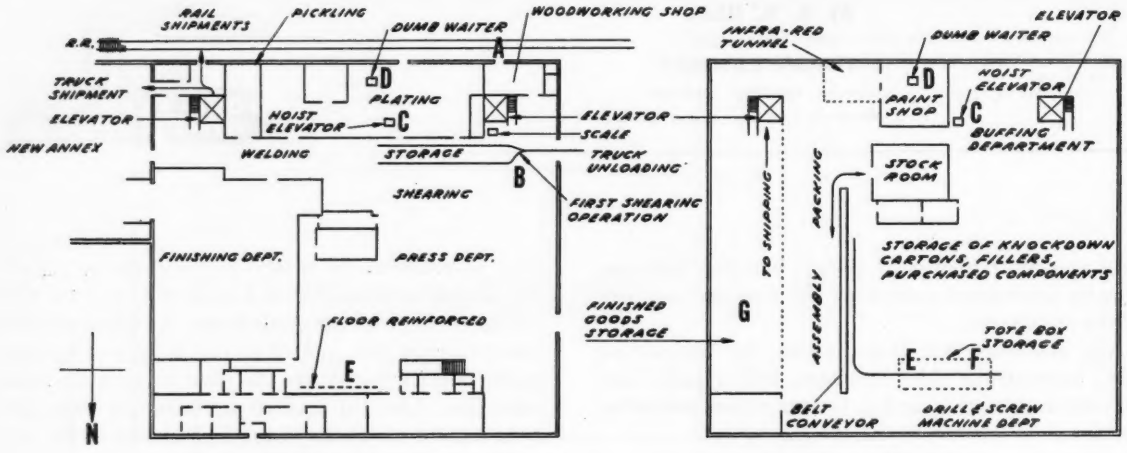
The former yard area becomes an efficient warehouse

The Old:

—this is how the open space looked—a yard that was not effectively usable.

The New:

—yard was roofed, became a link in the flow of materials. Central main aisle has 25 U-shaped storage bays on each side, each holding 88 pallet boxes (12" x 36" x 36") of 4000 lb. capacity.



HOW MODERN HANDLING EQUIPMENT was adapted for an old building. A. Old entrance for receiving through the woodworking shop and across the elevator platform. B. Present monorail system which allowed truck receival of bundled sheet steel without construction of new truck dock. C. Hoist-elevator which transports parts directly between plating and buffing. D. Dumb waiter which performs similar function between the plating and paint shop. E. Ceiling of first floor which was reinforced for heavy tote box storage. F. Monorail system takes strain off floor when delivering these boxes from storage to assembly. G. Section of the floor which was reinforced to permit storage of additional finished goods.

Handling Tools Can Remedy Old Plant Bottlenecks

The equipment: castered vehicles, tote boxes, monorail, hoists, elevators.

By HUBERT D. PECK,
Superintendent Armstrong Products Corp.
Huntington, W. Va.

A BUILDING which was constructed for the manufacture of certain types of goods cannot always be adapted to new products.

The Armstrong Products Corp., Huntington, W. Va., recently celebrated its fiftieth anniversary. Half a century ago, when the present structure was built, the company manufactured a line of light-weight items such as small electrical appliances.

Manufacturing has shifted recently to a line of circulating heaters. The latter product, which weighs up to 140 lb. each, is far heavier than the small appliances for which the building was originally designed.

The building which houses the company's operations is a two-story structure; each floor measures 200 feet square. One 5000-lb.-capacity elevator is located at each end on the south side. One is used for transportation of in-process parts; the other primarily to move cartoned stock to shipping.

Building Limitations to Be Corrected

In recent years it became apparent that certain building limitations had to be corrected. These limitations were caused by (a) the far heavier product than manufactured originally, and (b) the need for modernized handling. In analyzing the problem it was found that five major area improvements had to be made. These were: 1. Receiving. 2. Transfer of parts from one department to another located directly above. 3. Storage of exceptionally heavy parts on the

(Turn to page 46)

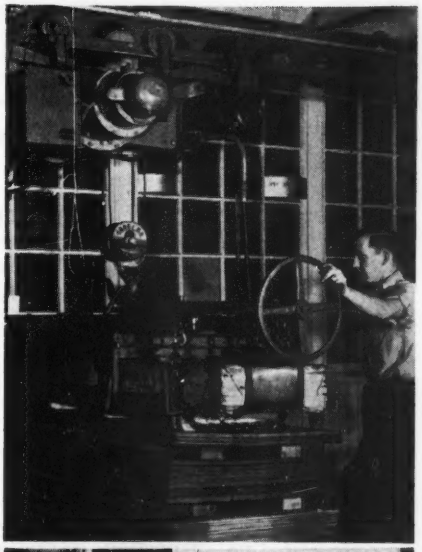
Three Bottlenecks and Their Solutions

1. Receiving:

Most parts travel through machining at the west side of the main floor, then to the finishing department, finally via the elevator to second-floor storage.

On the upper level, floor load capacity ranges between 80 and 100 lb. per sq. ft. For this reason, castered 25″ x 50″ x 30″ floor trucks are used predominantly for inter-departmental travel. Temporary storage of most parts can be accommodated on these floors. Stacking of some items to heights of 10 ft. is possible. However, the storage of cast iron components for gas space heaters did present a problem. These are contained in metal tote boxes and stacked five high (Area F), on the second floor.

Moving the heavy containers from storage to final assembly (on the upper floor) was a further complication. Again, powered rolling equipment was not feasible. Manual handling of these containers on and off other carriers would entail undue physical exertion. Consequently, a 150-ft.-long section of monorail was installed (E). This is located directly above the stacked boxes and extends around a 90-degree turn to the final assembly conveyor. As shown, loaded tote boxes are effortlessly transferred between the two departments by one man using a power hoist and a lifting rig.



2. Inter-Floor Travel:

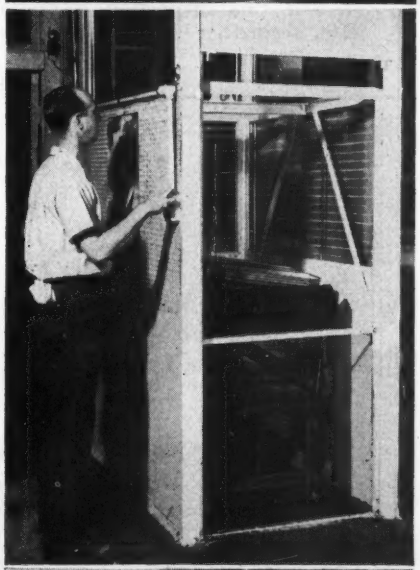
Another recent installation was a hoist-elevator (C), which transports parts between plating and buffing departments located in the same relative area on two floors. When the building was originally designed these two departments were not needed. The most efficient practice now would be to place them side by side—which would be done in a new building. Space limitations in the present structure precluded the placement of both on the first floor; and plating has to be in its present location for drainage reasons.

To move parts between the departments via one of the main elevators would entail extensive horizontal travel. It would also mean delays while waiting.

Very recently, a hoist-elevator, or lift, was installed. This consists of a 3½′ x 5′ platform which is raised and lowered by a 2000-lb. electric hoist. The platform accommodates one castered shop truck (an average load to and from these departments), and is equipped with four rollers on each of four corners. These ride against angle irons which comprise the shaft.

The lift assures prompt delivery of in-process parts between the two departments. Strain of excess traffic is taken off the elevators, which are freed for transporting heavier loads. Also, excessive horizontal travel between 3 dumb-waiter elevators is avoided.

At one end of the plating department is a dumbwaiter (D), which delivers parts to the paint and lacquer department located directly above. This was installed for much the same reason as the hoist-elevator; also because these parts are moved infrequently and loads are light. Consequently, it was more economical to install the dumbwaiter for direct delivery between the departments.



3. Limited Floor Load Capacity:

Structural obstacles were the main problem in receiving. In "the old days" the limited shipments of heavy stock could be manually handled.

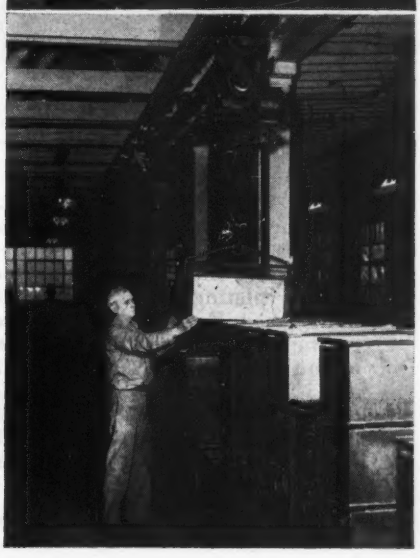
In more recent years, large quantities of sheet steel and brass arrived by rail on a siding. The only entrance at this side was through the wood-working shop (shown as Area A in the accompanying drawing). When material arrived, the elevator had to be called down and was used as a "gateway" to the plant. The elevator was opened at both ends and the loads maneuvered across the platform.

The entire method of receiving was highly unsatisfactory since the elevator was tied up for extended periods, or unloading was delayed until the elevator could be freed from its regular duties.

All sheets were individually handled. It required 48 to 56 manhours to unload and store stock from an average box car containing from 50,000 to 60,000 lb.

Strapped bundles of steel and brass now arrive only in trucks at a side door. In 1949, we installed a monorail system which extends from above a receiving pit approximately 30 ft. to the storage area (B). A spur line brances off to a shear which is the first of the press operations.

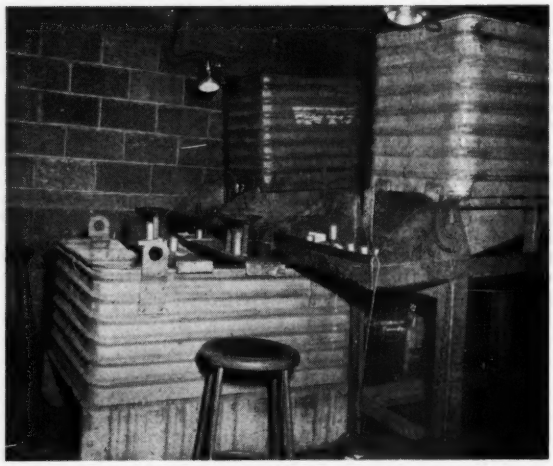
An electric hoist powered for travel handles the incoming stock in short order, without manual strain. A job that used to take up to 56 manhours now takes only three.



IDEAS YOU CAN USE

Tested Techniques for Better Production

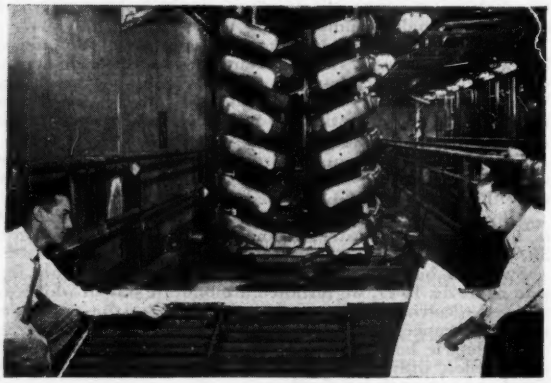
THE IMPORTANCE OF POSITIONING is illustrated in this photo of a drop bottom skid bin at an inspection station in a foundry. The skid is on a stand at waist height, a factor which brings the parts to the inspector's hand without requiring him to stoop. The sloping bottom of the skid bin is in effect a gravity chute. Of special interest are mechanical counters set up on the skid bin at floor level. Parts dropping through the funnel actuate the counter, thus keeping a record of the work without interfering with production. The convenient positioning of the work plus the effortless counting method have increased this inspection operation considerably, according to the plant owner.



A CLAMSHELL BUCKET IS HERE applied in a way usually not seen. Instead of being used for such aggregate as sand or cinders it is here employed for moving mountains of scrap tires. This particular photo was taken at the Firestone Tire & Rubber Co.'s 55-acre scrap rubber yard in Akron. The trick in the application of the clamshell is that a tooth was removed from each jaw of the bucket to facilitate engagement. Another favorable factor is the weight of the bucket, which compresses the material, resulting in efficient loads per bite. The weight of the bucket is also useful in winter, when it serves to break up frozen stockpiles of parings and other types of small or tangled scrap. High-capacity yard cranes were put in service in this operation since they must supply the Firestone reclaiming plant during 12 hours with sufficient tonnage for a continuous 24-hour operation. They are doing it regularly.

THESE INCLINED GUARD ROLLERS protect operators at the U. S. Springs and Bumper Co., Los Angeles, against the potential danger of stepping into caustic soda tanks used in bumper plating. Temperature of the acid is 200 degrees F. If a worker propelling a load on the monorail carrier should step too close to the danger zone (on the inclined rollers, that is), here is what happens. He rolls down to the working floor—away from the tanks. 2. A warning bell sounds. 3. The monorail carrier becomes part of the safety system since it is locked in position.

(Continued on page 42)



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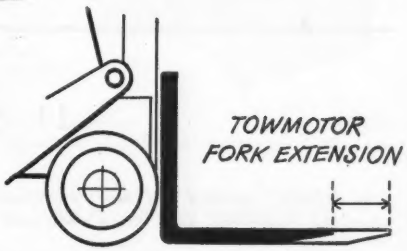

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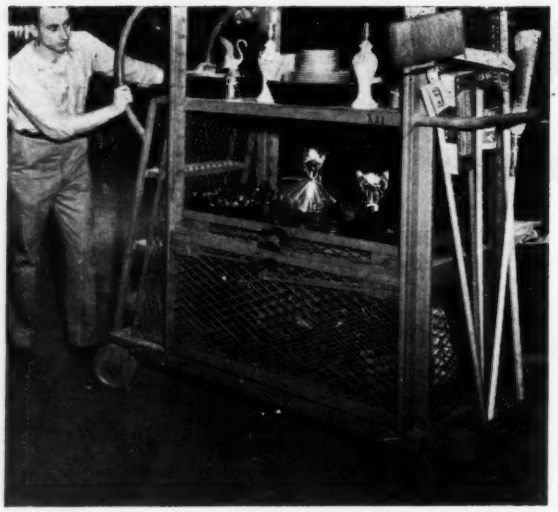

A VERSATILE ORDER PICKER for fragile merchandise is this ladder truck which is used in the new bulk service building of Carson Pirie Scott & Co., leading Chicago department store. The vehicle has a floor lock, which is actuated by stepping on the bottom step. The operator is enabled to reach high stock shelves by ascending the ladder and standing on top truck deck. It has a special slip-proof finish, and three levels for merchandise. Note that pressed metal sides give visibility inside, which is an aid in preventing breakage of china, glass, lamps and other expensive merchandise. The center shelf is removable. It is taken out when taller items (like lamps) are gathered.

HAND CARTS are invaluable handling tools in many shop operations requiring the movement of smaller supply parts to numerous stations. The point is that a seemingly harmless-looking hand cart can be made safe and efficient with a little forethought. This photo illustrates the point. The "old" buggy, at the left, has a sharp support rod which used to catch on obstacles during travel. The result was upset loads, disgruntled workers, and delays. The loop support (arrow) on the improved cart overcame these hazards and handicaps. The idea is simple—and one that may well save you annoyance and time loss on the production or supply job.

11 Steps To Elevator Safety

1. Check existing elevator equipment against the American Standards Association code and note deviations.

2. Pay particular attention to deficiencies at landings and entrances; 86% of *all* elevator accidents occur at the landing or car entrance. This includes 76% of all *serious* and *fatal* accidents. Use approved interlocks and contacts.

3. Eliminate hand rope operations where possible.

4. Be sure that structures will support added weight of any new equipment.

5. Replace wood car and platform frames with steel to avoid danger of undetectable dry-rot.

6. Replace hoist and governor ropes as needed, but don't change size or type without consulting manufacturer. Reshackle hoist and drum counterweight ropes of overhead drum machines yearly.

7. Do not over-lubricate. Consult elevator manufacturer for correct lubricant on rails and ropes.

8. Inspect car guide shoes, safety shoes and car safety periodically to insure correct operation.

9. Make rated-load tests of traction to check wear of driving sheave rims on single wrap traction machines.

10. Test for proper function: of machine brake yearly, of safety devices bi-annually.

11. Do all refinishing of enclosures at top floor. Do not paint working parts of governors and safeties.

3 specific handling problems solved at OTIS TERMINAL WAREHOUSE WITH BAKER FORK TRUCKS

The Otis Terminal Warehouse Corporation, one of Cleveland's largest warehouses, handles about 17,600,000 pounds of merchandise per month. Approximately 25% of this tonnage is handled by two Baker FQ (light-weight, low-cost) Fork Trucks installed in July 1949. These trucks are used for unloading, storing and loading all types of merchandise for shipment.

The use of Baker Electric Fork Trucks has solved three specific problems which confronted Otis:

1. The hazard of breakage in handling fragile merchandise has been materially reduced by smooth starting, smooth acceleration and smooth lifting and lowering of loads.
2. Clean electric power has made low-cost mechanized handling with Fork Trucks possible in certain confined areas which cannot be ventilated.
3. Maintenance costs of handling equipment, which were considered excessive, have been reduced, with the added resulting benefit of less time out of service for repairs.

(Top) *Otis takes full advantage of storage space by tiering to the ceiling.*

(Center) *Portable roller conveyors speed loading and unloading of palletized merchandise on freight elevators.*

(Lower) *Baker Fork Truck tiers drums in storage. Lower tier is placed on end, and second tier rolled on upended drums.*

Since nearly 100% of all labor at Otis Terminal is for material handling, the efficient use of Fork Trucks has kept their operating costs in line. Moreover, by tiering, Otis gets maximum capacity from storage areas.

A Baker Material Handling Engineer will gladly show you how you can solve similar handling problems in your plant or warehouse.

BAKER INDUSTRIAL TRUCK DIVISION *of The Baker-Raulang Company*

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SPEED flow of materials.
SPEED handling of finished products.

SPEED. That's the word that best describes Lamson Conveyors. In plant after plant, Lamson Conveyors — specifically applied for specific needs — cut materials handling costs at least 30%! And that's a saving. A *big* saving.

SAVE Wasted Effort... Handling Time and Valuable Floor Space.

In the large Westinghouse Home Radio Division Plant at Sunbury, Pa., the interlocking system of Lamson Conveyors eliminates bottlenecks . . . saves wasted effort . . . and many handling costs.

In the main illustration, radio receivers literally "roll" up to the inspectors on the lower conveyor line. After rigid inspection, they go to the cabinet section for installation and final inspection via the overhead Lamson Conveyors.

No wasted time. No wasted effort. No wasted footsteps.

***Mail* this coupon today for Free Booklet!**

Read how Lamson Conveyors can cut your handling costs up to 30%!

Lamson Corporation
1300 Lamson Street
Syracuse 1, New York

Please send me further information about your CONVEYORS.

I am interested in moving _____
(Type of product or material)

Name .....

Position .....

Company ..... **Address** .....

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JOINED BY ELEVATOR . . .

(Continued from page 31)

vey made by the engineers of an elevator company.

Their recommendation was to put in an elevator shaft between the two buildings for the installation of a modern freight elevator and also a passenger elevator. The plan was effectuated shortly. The awkwardly placed and not wholly adequate older elevators were removed entirely.

A special problem encountered in making the new installation was a difference in the elevation between floor levels in the two buildings. This difference, however, was only above the second floor. This situation was met with an elevator which has a door at each end. As an example, the elevator will take on its load on the fourth floor of the manufaturing building, then go up two feet and discharge the material on the warehouse side for distribution to stock.

The elevator has a 6′ x 9′ platform and a capacity of 5000 lb. The size is thus adequate for the bulky loads, and the lifting capacity is sufficient for the fairly concentrated weight of skid loads of chip board and paper.

Since it was not necessary to use the total available space between the two buildings for the elevator shaft, a part of it was used for a narrow shaft for paper scrap. (In this industry, a good deal of scrap is developed.) Our cutting room is on the sixth floor and the scrap shaft extends from here to the bale box on the first floor. The shaft has an opening on each floor for the immediate disposal of waste. Thus the construction of the elevator shaft was indirectly responsible for a better method of scrap

Quick information on New Products, Free Literature or Advertisements. Circle numbers on enclosed cards, and mail.

disposal, which contributed importantly to good housekeeping and safety. These considerations are paramount where burnable waste is involved.

Thus, the raw material (chip board) is moved by elevator to the sixth-floor cutting room for scoring and corner cutting; the in-process material (on skids) is then delivered by the same elevator to setting-up operations on the fifth, fourth, third or second floor. In short, the production flow is adequately served by the elevator. And, by use of a door at each end, warehousing is served without the former dupli-

RACK SUPPORTS 600 TONS—This bar stock rack is one of five recently installed by the Whitin Machine Works, Whitinsville, Mass., to solve the problem of storing and handling round, flat, angle and special shape stocks of steel, brass, aluminum and other metals. The

company has manufactured textile machinery since 1831. Measuring 15 ins. square, each rack pocket has the strength and capacity to accommodate three tons of 20 ft. bar stock, or a total weight of 1,200,000 lbs. per rack. —Courtesy, Unistrut Products Co.

cation of costly in-plant haulage miles. The present elevator shaft is also located centrally in relation to the receiving-shipping floor of each of the two buildings which face on a different street and have their own truck platforms.

It is patent that in-plant travel miles have been halved through our modern freight elevator installation. This applies to much of the handling as well. From this it is safe to guess-timate that the amortization period may be expected to be a reasonably short one.

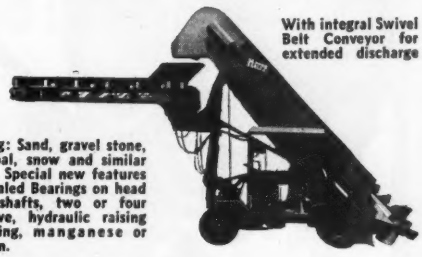
We at Scandore like to recall that this effective inter-floor material flow channel was created in space that was formerly only a gap between two buildings.

HAISS Material Handling

BUCKET LOADERS

LOAD 3 TO 8 YARDS PER MINUTE

One man operation
Self-Propelled
Self-Feeding



With integral Swivel Belt Conveyor for extended discharge

For loading: Sand, gravel stone, topsoil, coal, snow and similar materials. Special new features include Sealed Bearings on head and tail shafts, two or four wheel drive, hydraulic raising and lowering, manganese or roller chain.

CONVEYORS • CAR UNLOADERS

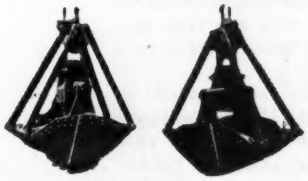
TROUGH OR FLAT BELT CONVEYORS
For loading sand, gravel, coal and similar bulk materials from cars or piles to trucks.

PACKAGE CONVEYORS
For handling bags, boxes, crates, cartons, etc. Portable or stationary mounting. All types—All sizes.

UNDERCAR UNLOADERS
Heavy duty for handling crushed stone, gravel, sand, coal and similar materials. Capacity up to 5 tons per minute.

SECTIONAL CONVEYORS
Channel Frame or Lattice Frame construction made in easily assembled individual sections for permanent or portable installation. All sizes and capacities available. Through belt—Flat belt type—for handling bags, boxes, packaged materials.

CLAMSHELL BUCKETS



EXCAVATING-REHANDLING
Heavy duty buckets for digging, dredging, rehandling. Capacities ¼ to 3 yards. Special narrow buckets available for trenching. Ask for bulletin H-175.

For further information write, 'phone or wire. Experienced Haiss representatives are located in all principal cities.

George Haiss Mfg. Co., Inc. division of Pettibone Mulliken Corp.

141st to 144th St. on Park Ave.
New York 51, N. Y.
'Phone Mott Haven 5-2200

4700 W. Division St.,
Chicago 51, Ill.
'Phone Spaulding 2-9300

Circle No. 59 on Reader Service Card for more information

Why Do Maintenance Men Go for U. S. Innacush?

Sales soar as more and more maintenance foremen praise the superior performance of this unique cushioned solid tire. The answer is simple—with U. S. Innacush, money and man-hours spent servicing and repairing industrial trucks have reached an unprecedented new low!

Look What You Get with U. S. INNACUSH:

- ★ **Maximum vibration dampening *with* minimum rolling resistance.**
- ★ **More sharp lug surfaces for efficient traction and easy steering.**
- ★ **Greater tread thickness for long service.**
- ★ **Cut-resistant tread compound all the way through.**
- ★ **Higher carrying capacity.**
- ★ **Reduced maintenance costs; from oil lines to steering gear.**
- ★ ***Definite* reduction in operator fatigue.**

U. S. Innacush is available in a complete range of sizes for almost every industrial truck, and is only one type in a complete line of U. S. Industrial Tires ready to serve your materials handling needs.

Your U. S. Royal Distributor can show you how the U. S. Innacush and the entire U. S. Industrial Tire line will save you money, and how his on-the-spot service will cut your "down time" costs. He's in the Classified Telephone Book—call him today.

U. S. ROYALS

***Products of* UNITED STATES RUBBER COMPANY**

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OLD PLANT DEFICIENCY . . .

(Continued from page 38)

upper level. 4. Transportation of these parts between two departments. 5. Storage of cartoned finished goods. In addition, equipment had to be installed in accordance with limited floor load capacity on the second floor.

THIS ELEVATOR is used for delivering parts from the first floor to second floor storage, assembly. Castered carriers are required because of the limited floor load capacity.

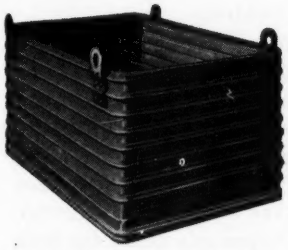
We consider the changes made only a start in the right direction. The monorail has made receiving an efficient one-man operation. On the upper floor, it transports heavy containers in minimum time on the limited capacity floors. Castered equipment has been another answer to this same problem. The dumbwaiter and the lift deliver in-process parts directly to departments located one above the other, thereby reducing elevator traffic.

The application of modern material handling equipment to our 50-year-old building has posed some tough problems, but their solution has maintained operations on a profitable basis.

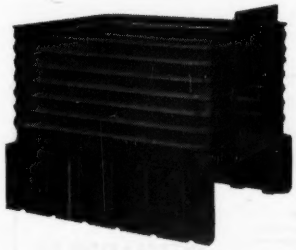
Use the postcard bound into this issue for more information on Advertisements, New Products and Free Literature. Note the number to circle below each item.

Type PB-120L Truscon Box and Platform with full length lifting lugs.

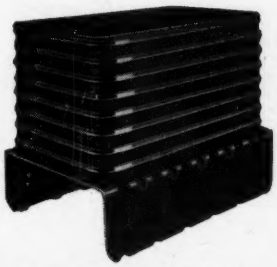
Type P-1. Truscon One Piece Steel Skid Platform.



Type B-80C Truscon Box Equipped for Crane Handling.



Type PB-650 Truscon Box and Platform with sliding End Door.



Type PB-120 Truscon Steel Box and Platform.

IF YOU'VE GOT A

MATERIALS-HANDLING PROBLEM...

there's a Truscon Answer for it!

● The jumbled, helter-skelter handling and storage of materials, parts and finished products has no place in today's efficiency plan for profits.

The slow piece-by-piece handling and moving of materials in any step of your manufacturing process, from raw materials to finished product, is costly throughout the day. Because of long experience in the materials handling field, Truscon has a wide range of steel boxes and steel skids that will exactly fit your needs. Write for the Truscon catalog of materials handling equipment, to help you plan a traffic system that will encourage greater output per man hour of labor.

Truscon has field men who have helped solve many materials handling problems, and can be of helpful assistance to you. In the competitive period of industry that lies ahead, you will benefit in many ways from Truscon Steel Boxes and Steel Skids—look to Truscon to help you now.

TRUSCON

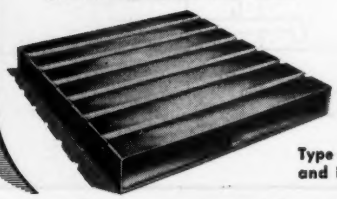
STEEL COMPANY

Pressed Steel Division

6100 TRUSCON AVENUE • CLEVELAND 4, OHIO

Subsidiary of Republic Steel Corporation

Truscon Double Face Steel Pallet.



Type PB-120T. Truscon Steel Box and Platform with Tiering Lugs.

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OLD PLANTS . . . EFFECTIVE HANDLING

Integrated Co

Increases Old

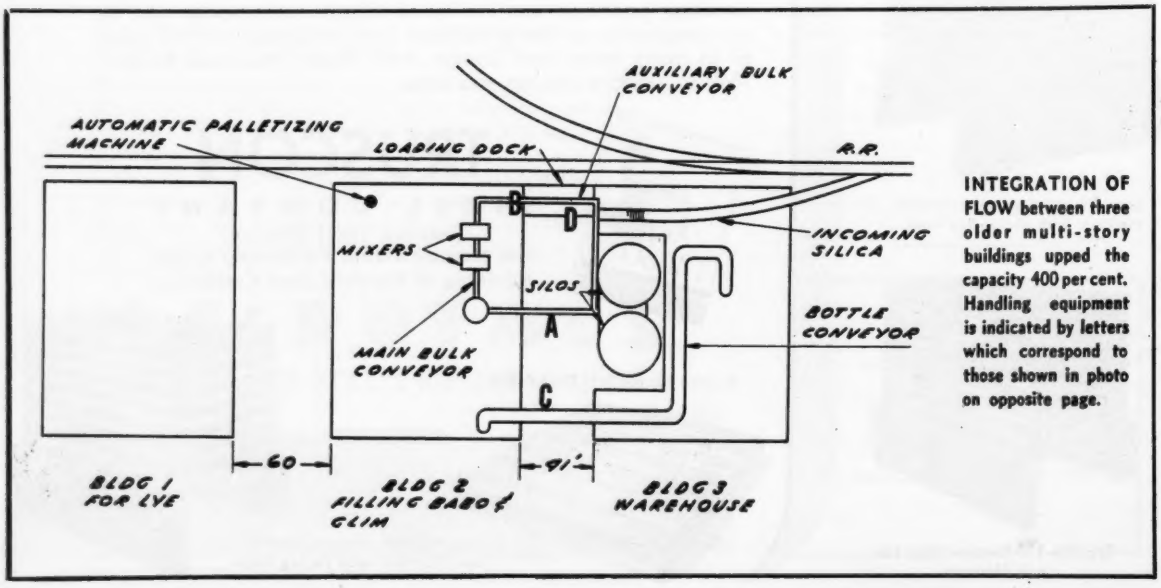
A MAJOR problem which confronted B. T. Babbitt, Inc., Albany, N.Y., was one of integrating the flow between three older buildings which were separated by public thoroughfares. The company markets a powdered grease-dissolving cleaner, Bab-O, and a liquid penetrant, Glim. Many years ago, when the company first moved into its present buildings, it was desirable to use multi-story structures for the gravity flow which they offered from the upper levels.

Inter-Floor and Inter-Building Flow

The three buildings which comprise the plant are shown in the accompanying drawing. All are 125' x 178'. Only Building 3 is on one level; elevators are used in the other two multi-story buildings.

The need for reduced handling costs and time was the reason for the installation of modern handling equipment. Such equipment was also needed to tie in the flow between the warehouse in Building 3 and Building 2, and to a lesser degree between Buildings 1 and 2. No. 1 serves mainly for receiving packaging and shipping lye; No. 2 for filling and packaging Glim and Bab-O. The company purchased the street between Buildings 2 and 3, which was closed and a covered truck dock was constructed with entry into both buildings. Thus, the dock is also used as a runway between the two buildings.

Building 3, a warehouse for certain bulk goods, was modernized so that handling equipment could be used. Its original plank floor was replaced with one of concrete, then the roof and walls were gradually rebuilt, first in the receiving section, then in the warehouse proper. At the same time, two 88-ft.-high silos were constructed as part of the warehouse (as shown). This was in line with the company's desire for bulk handling of certain powdered material, as a means of

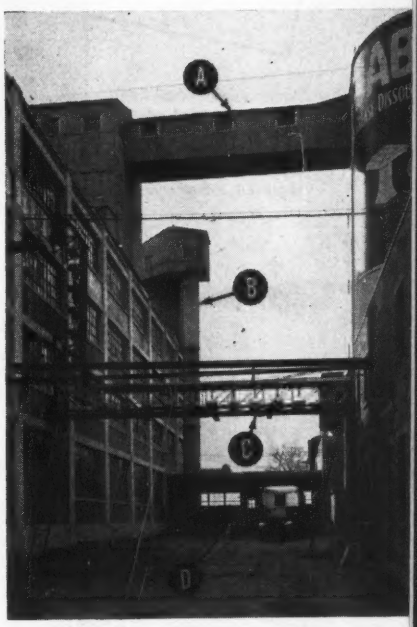


INTEGRATION OF FLOW between three older multi-story buildings upped the capacity 400 per cent. Handling equipment is indicated by letters which correspond to those shown in photo on opposite page.

d Conveyor — Fork Truck Installation

ld Plant's Capacity By 400%

How to speed production flow between three old multi-story buildings



Top Right—FOUR MEANS of bridging Buildings 2 and 3 which are separated by 41-ft. wide street. (A) screw conveyor for bulk materials; (B) auxiliary bulk conveying system; (C) tray-type trolley conveyor for cases of bottles; (D) dock which also acts as runway for the fork trucks.

Bottom Right—FORK TRUCK transfers palletized outbound goods across the 60-ft. wide street between Buildings 1 and 2.

Below—TRUCK DOCK has eliminated former confusion and is connecting link between Buildings 2 and 3.

Another STANDARD CONVEYOR Cost-Saving Report

Standard Inclinebelt Conveyor as installed at Dewberry Engraving Company, nationally-known manufacturer of quality engraved stationery.

Conveyor EARNS its ORIGINAL COST in First 3 Months

Dewberry Engraving Company, Birmingham, Alabama, nationally-known manufacturer of quality engraved stationery, writes us as follows:

"We installed one of your belt conveyors about two years ago. It has never required $1.00 in repairs and has worked perfectly every day. We operate 3 shifts, 24 hours a day and produce the largest quantity of engraved stationery in America. Your conveyor saved us its original cost in the first three months of operation. We have moved tremendous loads, far above the capacity you advise — without once stalling the conveyor. We do not see how we could operate without it."

Conveyors cut costs—speed operations — can do the same for you. Standard builds conveyors to handle "packages" of all types — bags, boxes, bundles, barrels, drums, cans, cases, cartons. Available in light, medium, or heavy-duty types — portable or stationary — systems, sections, self-contained units — power or gravity fed — yield remarkable savings in time, money and manpower.

Check your handling problem with Standard.

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul 9, Minn.

Write for Standard's General Catalog No. FL-90. Tell us what you want to handle or type of conveyors on which you want information.

Standard GRAVITY & POWER CONVEYORS

Engineered Conveyor Systems — Portable Conveyor Units — Spiral Chutes — Pneumatic Tube Systems

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reducing production costs.

Loads which had to be moved between Buildings 2 and 3 consisted of palletized cased goods and bulk silica. Fork trucks now transport cased goods between the two buildings across the covered truck dock. This dock is conveniently located for minimum moves to either truck or rail shipping from either building. It has also eliminated much confusion and congestion which formerly resulted when trucks had to park on the public thoroughfare during loading.

Bulk material in the form of silica is now unloaded from hopper-bottom rail cars inside the warehouse and transported to the 1,000-ton-capacity silos by means of a combination of enclosed bucket elevators and screw conveyors. Other conveyors transfer the product from the silos to the roof of Building 2, then to mixers located on the top floor. An auxiliary conveying system may be used in case of a breakdown. Duplicating the installation just mentioned, it is used once each week to make sure it is in proper working order.

AUTOMATIC PALLETIZING MACHINE located in Building 2 is expected to be amortized in three years.

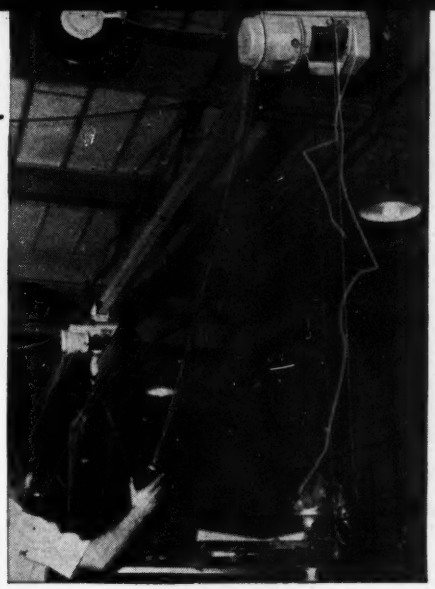
Role of Tray-Type Chain Conveyor

Elevators of 4000 lb. capacity are used for vertical moves within Buildings 1 and 2. Phosphate and a detergent are received in bags and drums at the rail siding behind Building 2. These are palletized and fork trucked to the elevator. On

GIVING COSTS THE

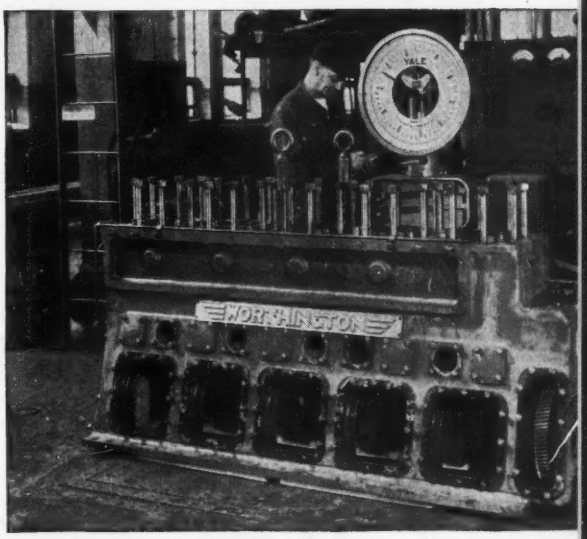
TRIMMING

THAT BOOSTS PROFITS!



"Cost of Goods Sold" is more than just another accounting phrase. It's the basic measuring stick used to determine the amount of your profits. Give it a good trimming and you increase your profits. Since 1/3 of every dollar spent on production goes into non-productive lifting, weighing, moving and warehousing, here is where you can cut costs the most.

That's where Yale Material Handling Machinery comes in! Yale Industrial Trucks, Hoists and Scales effect big economies in material handling—make your production dollars go further. Save time, effort and money. Let Yale "pay-off" tools widen the gap between profit and loss. The nearby Yale representative will gladly show you how Yale equipment can bring big savings to your plant. Start the ball rolling toward lower costs and increased profits. Get in touch with him today.



THE YALE & TOWNE MANUFACTURING CO.

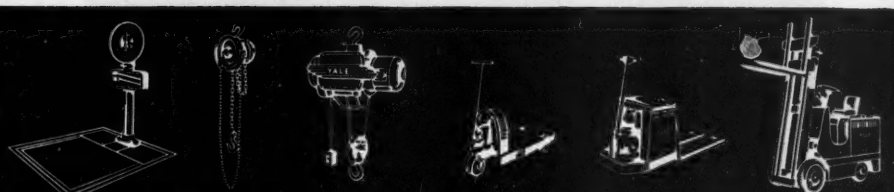
Department L-179

Roosevelt Boulevard — Philadelphia 15, Pa.

L-81

YALE

TOOLS THAT KEEP INDUSTRY "ON THE MOVE"



SCALES—Industrial • HOISTS—Hand and Electric • TRUCKS—Hand Lift · · · Electric · · · Gasoline · · · Diesel

CM METEOR

● Heavy duty electric hoist for stationary, plain, geared or motor driven trolley suspension. Single and two speed models. Capacities: ½ to 5 tons.

Here's Plant Improvement that

Pays off in 3 Ways

HOIST POWER

LOWERS HANDLING COSTS — Picks up raw materials, or finished parts for assembly and moves them along for pennies in power and seconds in time.

ACCELERATES PRODUCTION — Takes the slowing up "lags" out of assembly line movement. One man precision "spotting". Speeds up handling in shipping.

IMPROVES PLANT MORALE — Saves the backs and muscles of men so that they may produce with "morning" efficiency in late afternoon. Aids in accident control.

Frankly, we don't know how many factories have cut costs by putting CM Electric Hoists on production jobs, but we *do know* they keep coming back for more and more Meteors and Comets. You couldn't ask for more convincing evidence of a product's usefulness to industry than a constantly growing demand.

CM Meteor and Comet advantages are fully described in the complete CM Catalog. Write us for a copy and the name of your local distributor.

CM COMET High speed, sturdy, portable electric hoist. One hand control. Plug in on single or 3 phase power line. Capacities: ⅛ to 1 ton.

CHISHOLM-MOORE
HOIST CORPORATION
(Affiliated with Columbus McKinnon Chain Corporation)

GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.

SALES OFFICES: New York, Chicago and Cleveland • Distributors Everywhere

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the fourth floor of this building they are stacked by another fork truck. Lye is similarly handled in Building 1.

The elevators handle these moves effectively. However, when the company introduced its liquid penetrant about 18 months ago, the transfer of empty bottles was figured to strain the existing elevator equipment.

Recently, a tray-type conveyor

EMPTY BOTTLES in reshippable cases are loaded on conveyor in warehouse. Truck has 19′ lift.

was installed. This travels from the warehouse, across the street and up into the fourth floor of Building 2. The discharge end is adjacent to the start of the filling line. The trays are 12″ x 18″ with 16″-high retainers at one side. Two cases are placed on each tray.

A gravity conveyor connects the incoming rail cars and the start of the overhead conveyor. The speed of the powered carrier averages approximately 60 ft. per minute. A belt conveyor connects the end of the filling line with the inter-building conveyor. In the warehouse, the cases of filled bottles are removed from the trays, palletized and stacked to heights up to 19 ft. by an 8,000-lb. fork truck. This vehicle also stacks palletized cased loads of other products. The warehouse has a capacity of 200,000 cartons.

Thus, three means of transportation are used to speed the flow of goods between Buildings 1 and 2. 1. The truck dock "runway" is designed for fork truck travel. 2. Two screw conveyor and the bucket elevator systems for bulk goods. 3. Tray-type chain conveyor for cased bottles.

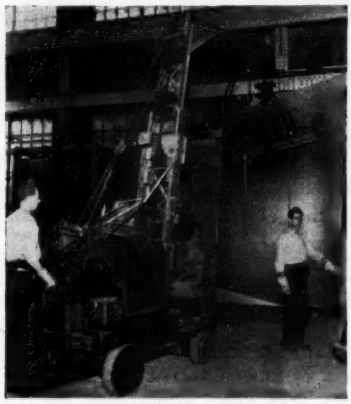
Fork Trucks Count Benefits

While Building 1 is to a great

extent independent of the others, there is some flow between it and Building 2. Since many outgoing shipments include some of the company's various products, including lye, the smallest portion of any load is transferred to the building from which the bulk of the load is to be shipped. A fork truck picks off such pallet loads from the doorway of one building and transports them across the street.

B. T. Babbitt, Inc. has benefited with the following production increases in unloading an average incoming rail car. 1. Silica. Formerly bags were unloaded individually and required 24 manhours for this task plus storing. With bulk handling equipment, only three manhours. 2. Phosphate. Formerly, 18 manhours to unload and store; largely manually handled. Now, with fork truck-pallet method, only nine manhours required. 2. Cases of empty bottles. Before, largely manually handled, 24 manhours. Now, with the conveyor for incoming loads and fork trucks for finished goods storage, 12 manhours. In fact, the company now can handle four times as much material as before—with the same number of men.

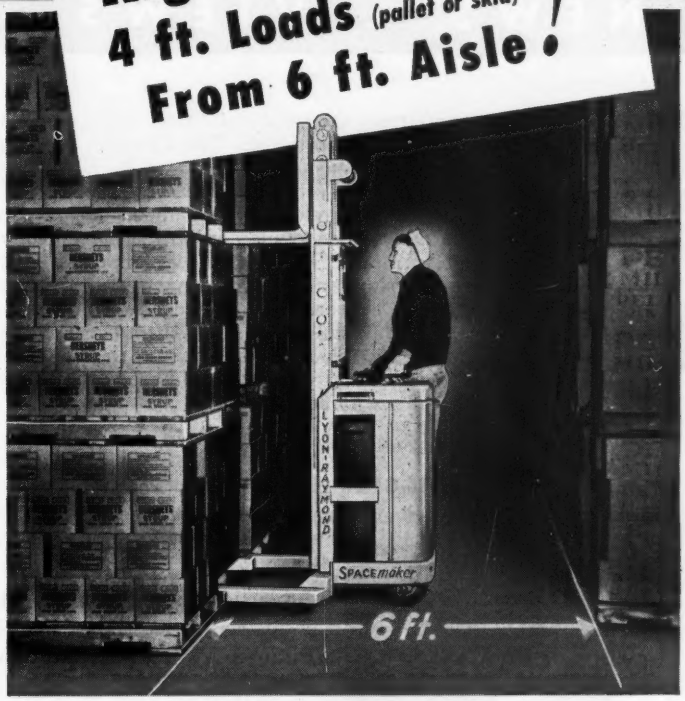
CRANE TRUCK WITH A VACUUM—Fitted with a vacuum pump and vacuum clamps, this crane truck is utilized for handling large sheets of rough plate glass to and from storage at Works No. 9, of Pittsburgh Plate Glass



Co., Crystal City, Mo. Such sheets are deposited either on special A-frame trailers in a vertical position, or flat in other types of special trailers for transport to finishing operations.—Courtesy, Electrical Industrial Truck Association.

Only tiering truck that will do this...

Right Angle Tier
4 ft. Loads (pallet or skid)
From 6 ft. Aisle!



LYON-Raymond
New SPACEmaker
Electric Tiering Truck

You'll have to see it to believe it! The new Lyon-Raymond SpaceMaker actually positions for right angle stacking in aisles narrower than its length *including load*. Does it so easily that anyone can maneuver it. No other tiering truck does anything like it—it's the result of an entirely new design concept —and it means you can utilize up to 40% more of your aisle space for additional storage. Here's why—

SHORTEST LENGTH *ever* — eliminates counterweight space. Load stabilized by ingenious four-point wheel locations.

GREATEST MANEUVERABILITY *ever* — easiest and speediest in tight quarters through 200° turning arc of offset drive wheel. Spring mounted swivel caster compensates offset drive.

LIGHTEST WEIGHT *ever* — makes possible tiering operations on low-capacity floors. Safe floor-to-floor traffic via small, low-capacity elevators.

Straddle Type, Telescopic

Models for tiering single- or double-face pallets; skid platforms. Get complete information! Learn about the many cost-saving applications never before possible with a tiering truck! *Write today for Bulletin 701.*

Platform Type

LYON-Raymond CORPORATION
Electric Power Trucks . . . Skid and Pallet Lifts
Hydraulic Elevating Equipment
Positioning . . . Sheet and Die Handling

3330 Madison St.
GREENE, N.Y.

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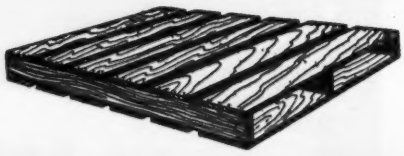
ON THE  PALLET

NEWS • VIEWS • TRENDS

WHITING CORP. has announced a new distributing policy for its Merchandise Sales Division, according to Stevens H. Hammond, president. The Division was organized in the Spring of 1949 under the management of A. E. Bottenfield, vice president. During the past year the Division's line of material handling equipment has been completely reorganized and expanded to include electric chain hoists, packaging and bulk material conveyor systems, overhead monorail and light crane system and hoist-type cranes. Twelve sales territories are said to have been organized and manned. Now, under the currently announced distributing policy, Whiting materials handling equipment distributors are being appointed. Distributors are being selected mainly from the ranks of the established firms among industrial distributors, hardware wholesalers and automotive equipment jobbers.

STEVENS H. HAMMOND

RAYMOND P. WIGGERS is shown here receiving the annual Putman Award for "the best use of industrial advertising and the best documentation of such use." Raymond P. Wiggers is advertising manager of The Frank G. Hough Co., Libertyville, Illinois. This award also included the company's agency, Ervin R. Abramson Advertising, Milwaukee, Wis. It was presented at the National Industrial Advertisers Association convention in Los Angeles. The Putman Award was established by Col. Russell L. Putman, Putman Publishing Co., Chicago, to help provide tangible evidence of the superiority, the high efficiency and the effectiveness of industrial advertising.

MORE THAN 30,000 PERSONS are expected to visit the 32nd Annual National Metal Congress and Exposition which is to be held in the International Amphitheatre, Chicago, October 23-27. Four societies sponsor and participate in the event. The American Welding Society will hold technical sessions at the Sherman Hotel, Monday through Friday. The Institute of Metals Division of A.I.M.E. will hold similar sessions Tuesday, Wednesday and Thursday at the same hotel. The society for Non-Destructive Testing will hold meetings on Tuesday, Wednesday and Thursday at the Morrison Hotel. Finally, The American Society for Metals has scheduled a full week, Saturday through Friday, of technical sessions at the Palmer House. More than 400 firms will display their products and services, with trained men in attendance. For a complete program of the Metal Congress, write American Society for Metals, 7301 Euclid Avenue, Cleveland, Ohio. For hotel accommodations, contact the Chicago Convention Bureau, Inc., 33 N. LaSalle Street, Chicago, Ill.

THE AMERICAN MANAGEMENT ASSOCIATION has announced the election of Robert D. Handley, advertising manager, Sylvania Division, American Viscose Corp., New York, as chairman of the Exhibitors' Advisory Committee of the 20th National Packaging Exposition. The Exposition will be held in Atlantic City, April 17-20, 1951.

MORE THAN 1200 VISITORS attended the recent open house at Alvey Conveyor Mfg. Co.'s new million dollar plant in St. Louis. This new plant is believed to be the first of its size ever designed and constructed for the manufacture of package conveyor systems exclusively. Meetings for factory representatives from Alvey's 12 branch sales offices throughout America were held on the two days preceding the formal opening. Part of this period was given over to reviewing the selling program of the company.

MEN IN THE NEWS

M. W. Sledge

M. W. SLEDGE has been named to replace the late E. W. Stephen as manager of the Belt Sales Department at the Goodyear Tire & Rubber Company. The announcement was made by H. D. Foster, manager of the Mechanical Goods Division.

Formerly the assistant manager, Sledge will direct all belt sales activities and will work closely with C. F. Smith, newly appointed chief project engineer, on large conveyor belt prospects.

In a complete revamping of the department, H. R. Harrington, former senior staffman, was designated as assistant manager and J. L. Thornton became manager of the belt sales coal division. A. B. "Dutch" Walter continues as chief engineer of the coal mine division.

W. JACK DEVELIN has been appointed consulting engineer to head engineering and sales of the solid steel belting department of Metalsmiths, division of Orange Roller Bearing Co., Inc. This division will specialize in endless, wide, polished, stainless steel belts. Develin has had long experience designing and engineering conveyors, and was previously manager of the conveyor division of Sandvik Steel, Inc.

WILLIAM R. SANDBERG has been appointed general sales manager of Phoenix Manufacturing Co., Joliet, Ill., and Catasauqua, Pa., according to an announcement by E. N. Gosselin, president. Sandberg will supervise sales and sales promotion for all four of the company's divisions, Horse Shoe, Flange, Forging, and Moldit (rubber products).

APPOINTMENTS of John J. Dietz as chief engineer and Joseph A. Garratt as assistant chief engineer in charge of aeronautical products, have been announced by George E. Stringfellow, vice president and division manager, Thomas A. Edison, Incorporated, Instrument Division, West Orange, New Jersey. Dietz has been with the Instrument Division since 1941 and has served in the engineering department as a product engineer section head and

"Little strokes fell great oaks."

—Ben Franklin's Almanac, 1757

On thy chart of business for the month, beware lest ye line of rising costs take all ye joy out of ye record production.

—Acme Steel Notebook, 1950*

Efficiency and thrift are good solid American virtues—just as applicable to business as they ever were.

For more than seventy years, Acme Steel methods and Acme Steel products have been helping a lot of companies get improved efficiency and greater thrift. More than 50,000 Acme customers in every industry now enjoy these benefits, particularly in departments and operations concerned with packaging, shipping, materials handling.

For example, every day thousands of shipments arrive at their destination securely protected with Acme Steelstrap or Unit-Load Band. Huge logs and tiny toothpicks, gigantic motors and delicate microscopes . . . leather, machinery, food, glass, textiles, chemicals, paper, petroleum . . . Acme methods work for them all.

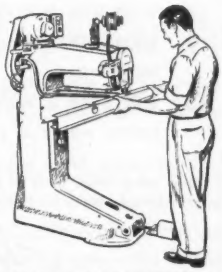
Illustrated here are two other Acme Steel products and more are listed below. If you would like to know more about them and how they may be able to help you, write on your business letterhead and ask for free booklets on the specific products in which you are interested.

ACME STEEL COMPANY

Dept. F-90, 2838 Archer Avenue, Chicago 8

There are 46 Acme Steel service offices in the principal cities of the United States and Canada.

Acme-Champion Bag Stitchers provide speedy, neat, economical bag closures for food industry.



The heavy-duty Acme-Morrison Metal Stitcher is used extensively in assembling parts in the aircraft industry.

**The sagest maxims of Ben Franklin, together with modern parallels, appear in Acme Steel Notebook, 1950. We have a free copy for you. Just ask for it.*

ACME STEEL CO. CHICAGO

ACME STEEL

Acme Steel depends on a lot of other businesses, big and small. We buy each year about 35,000 items, ranging from coal and semi-finished steel to paper clips from some 1800 suppliers all over the country.

ACME STEELSTRAP flat steel strapping and ACME UNIT-LOAD carload bracing BAND, SEALS and TOOLS • ACME SILVERSTITCHER machines • ACME SILVERSTITCH stitching wire • ACME-MORRISON METAL STITCHERS and BOOK STITCHERS • ACME-CHAMPION BAG STITCHERS • ACME HOT AND COLD ROLLED STRIP STEEL • ACME GALVA-BOND steel slat stock for Venetian blinds • ACME STEEL SPECIALTIES, including hoops, corrugated fasteners, nail-on strapping and other container reinforcements • ACME STEEL ACCESSORIES—snips, cutters, punches, tool mounts, reel stands, coil holders, coil trays.

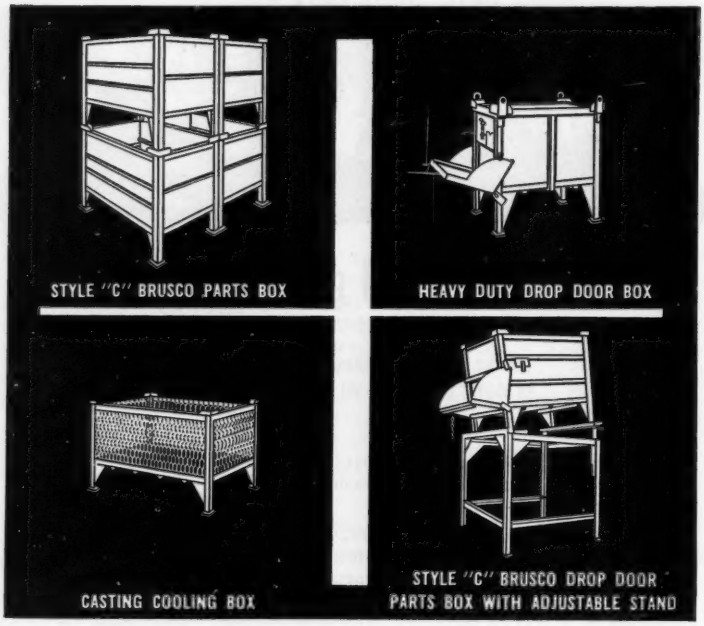
Circle No. 66 on Reader Service Card for more information

IS YOUR PLANT

HANDLING PRODUCTION PARTS

WITH PEAK EFFICIENCY ?

Let **BRUSCO** show you how to hang on to parts handling dollars that you may be losing.


STYLE "C" BRUSCO PARTS BOX
HEAVY DUTY DROP DOOR BOX
CASTING COOLING BOX
STYLE "C" BRUSCO DROP DOOR PARTS BOX WITH ADJUSTABLE STAND

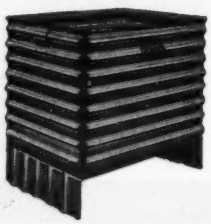
1. **BRUSCO** saves all kinds of valuable space when it comes to handling and storage. Units are easily stacked or tiered to make full use of vertical space, leaving more floor space for production work and machinery.
2. **BRUSCO** is engineered to work with every method of material handling.
3. **BRUSCO** is all steel, welded for strength and rigidity and fabricated with the correct gauge to meet your handling requirements.

Shown above are a few standard items of the **BRUSCO** Material Handling Line. These and many other units of **BRUSCO** equipment can be built to fit your particular handling conditions. *Write for full information. If you have a handling problem, let* **BRUSCO** *beat it.*

HERE'S A Brusco BUY!

Parts Box No. 524

A standard parts box with 14 gauge corrugated steel body and 7½" underclearance, 26" wide; 36" long; 26" deep. Loads up to 3000 lbs. with 14 cu. ft. capacity. Tiering plates and/or crane lugs at slight additional cost. *Available in special sizes.*



DELIVERY IN 30 DAYS **$26.50 each**

Brusco

HANDLING EQUIPMENT

BRUMMELER STEEL PRODUCTS CORPORATION

1410 Ionia Ave. S. W., Grand Rapids, Michigan

Circle No. 67 on Reader Service Card for more information

finally, development engineer since August, 1942.

J. A. Garrett returns to the engineering department from the sales and service department, where he specialized in aeronautical products. He has been with the division since 1941, with the exception of two years in the Army, part of which was spent in the Engineering Standards Branch at Wright Field, Ohio.

THE American Pulley Co., Philadelphia, has announced the following appointments. Gerard P. Weishaar is now eastern regional manager and will have direct charge of district managers and representatives in the New England, Rochester, New York, Philadelphia, Charlotte and Atlanta territories. John T. Barron was named manager of the company's Power Transmission Division, H. William Overman manager of its Material Handling Division, and Henry H. Hamilton, advertising manager.

JAMES A. Gilruth, formerly advertising and sales promotion manager of Gould Storage Battery Corporation, Trenton, has joined Harry W. Smith, Inc., New York publicity firm serving industrial advertising agencies and manufacturers with technical markets. Gilruth will be senior editor.

TO OFFER expanded sales engineering facilities to midwestern purchasers of industrial batteries, the Chicago regional offices of the Gould Storage Battery Corp., Trenton, N. J., has moved to larger quarters. The Chicago office, headquarters for sales representatives and field engineers servicing industrial battery users from the Rocky Mountains to Ohio, is headed by R. C. Cragg, midwest regional manager, C. W. Hanna is the Chicago district manager.

GEORGE CARLETON, JR. has recently been made president of the Nice Ball Bearing Co., Philadelphia, Pa., succeeding W. H. Rossmassler, who has retired. Carleton started with the company in 1929 and since has been successively advanced to the positions of sales manager, vice president, and executive vice president.

WALTER C. Leitch, vice president and director of sales of The Wayne Pump Co., Fort Wayne, Ind., has announced the appointment of R. P. Eninger, formerly domestic sales manager, to the post of manager of the Air Compressor Division. Eninger's long experience in the air compressor field, starting with product testing and design in the laboratory in 1930 and continuing through the last 12 years in various sales capacities fully quali-

fies him for his new responsibility. He was made manager of Foreign Sales in 1945.

CARL J. SHARP, president of Acme Steel Co., Chicago, announced that the company's board of directors had elected Fred M. Gillies to the position of executive vice-president. The executive vice-presidency of the company has been unfilled since Chester M. MacChesney was elected chairman of the board in the fall of 1949.

DIRECTORS of Federal Telephone and Radio Corp., Clifton, N. J., a manufacturing affiliate of International Telephone and Telegraph Corp., have elected two Federal executives, William Hatton and Frank B. Powers, as vice presidents of the corporation. Both officials have had extensive experience in communications and manufacturing as a result of their service in Federal, I. T. & T. and other companies.

J. S. Bennett, vice president of the American Engineering Co., Philadelphia, has announced the appointment of John C. Mevius who, for the past 10 years, has been sales manager of the company's Materials Handling Division, to the post of sales manager of their Hydraulic Division. Mevius, in addition to his new duties, continues to be responsible for materials handling sales, and will be assisted in hydraulic sales by G. A. Fleck.

J. EDWIN FLANNERY, manager of Jervis B. Webb Co.'s Philadelphia territory, will round out 25 years in the conveyor business as of September 9, 1950. He started in conveyors as a co-op mechanical engineering student, at The University of Cincinnati in 1925, and has been with Webb since December 1937 in the Philadelphia district. This embraces eastern Pennsylvania, southern Jersey, Maryland and Delaware. The district office address is 23 E. Albemarle Ave., Lansdowne, Penna.

THOMAS N. PARLON has been appointed sales manager of the New York regional office of the Philadelphia Division of The Yale & Towne Mfg. Co. Parlon has been on the sales staff of the New York branch of the Philadelphia Division of Yale & Towne, under James J. Murray, regional manager. This branch handles the sale and service of Yale material handling equipment.

the BELL Prime Mover

Bulky materials easily transported inside and outside the plant. Dozens of such jobs can be handled by the Prime-Mover.

Prime-Mover helps keep the plant clean. Bucket takes all kinds of scrap, large and small.

GET MORE VALUE FROM YOUR MAN-HOURS

- - you can do it many fold with

THE PRIME-MOVER!

Gear driven—no belts or chains

Engine protected against dirt

Turns in its own length, 63½"; width 31½"

Converts from bucket to platform without tools

Eight hours continuous running on 3 gal. of fuel

Bucket holds 10 cu. ft.

THIS versatile machine is doing a remarkable job in many plants. It can do the same for you. If some particular problem of material handling is bothering you—the Prime-Mover can answer that one and additionally help in a number of other ways, too. This rugged unit works outdoors and indoors to keep things moving. Here is a labor saver that has cut handling costs as much as $36 a day. Send coupon. We'll send you complete information at once.

THE PRIME-MOVER CO., Muscatine, Iowa

THE PRIME MOVER CO., Muscatine, Iowa F-9

Gentlemen: Please send information on Prime Mover for handling .....

Your Name.....

Company .....

City ..... State .....

Circle No. 68 on Reader Service Card for more information

In This Textile Mill . . . .

THE LOADS R

AS you drive onto the grounds of the Mt. Vernon-Woodberry Mills, Inc., Baltimore, Md., you pass a building which displays a well-maintained sign of the erection date—1873. The several mill buildings are of red brick and have wooden floors which have served for decades. While the exterior of the structures reflects the style of a bygone era you will find the latest in handling equipment and techniques within the buildings.

A good example of modernized handling procedures is to be found in the company's Meadow Mill, which is devoted to the production of rayon fabric. Popular widths are 48 inches and wider. This material is taken off the looms in rolls averaging about 250 yards and weighing 180 pounds each.

The entire operation in this two-floor layout is handled by monorail in conjunction with electric hoists. A standard freight elevator is utilized in the transfer of the loads from the upper to the lower floor.

Production Travels on Monorail

Monorail equipment is also used in the second-floor slasher room. The warp yarns, the foundation of woven fabrics, contain several thousand ends, or yarns, which are wound on a beam. The number required for any particular warp is made up by combining the yarns from several section beams, which contain several hundred yarns each. The units are weighed in transit on a dial head track scale which is "back weighted" so that only the yarn is weighed. The full section beams are transferred from the warping machine (beamer) by monorail hoist to storage, which is located centrally in the oblong room, and thence to the slasher. Enough section beams are set up (also by monorail hoist) on the stand back of the slasher to make up a warp of the required number of ends. The completed warp beams are taken off the slasher by a 1000 lb. electric hoist, as shown, and deposited in temporary storage or delivered to the elevator.

When the load has arrived on the lower floor, an operator runs the warp beam out on the monorail which extends into the cloth room. The warp beam is lowered at the end of the "passageway to the weave room", where it is picked up by a chain hoist on the weave room monorail system and taken to the looms.

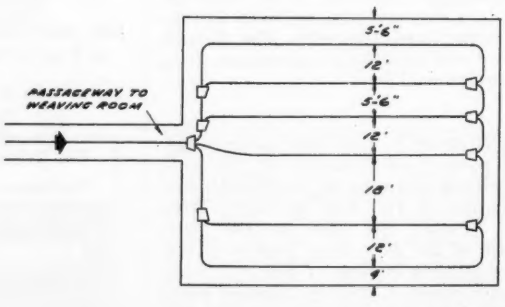
Monorail Flow on Lower Floor

The operator propels the suspended beam to the 65′ x 215′ weave room, where the 136 looms are arranged in eight parallel rows. As the accompanying flow diagram shows, six monorail tracks extend over the aisles between the looms the full length of the room. Four tracks would have been sufficient—one line serving two rows of looms—but two extra tracks had to be added because of interference from column aisles.

The load enters the large room, and from the centrally located delivery track a 3-way switch connects to tracks branching off to the left and right for the width of the area taken up by the looms. From these tracks 2-way switches guide the traveling warp beam to the longitudinal monorails extending over the machine aisles (attached at a height of about eight ft. above floor level). At destination, the hoist-suspended beam is lowered into the loom. Empty beams are returned over the same system, via elevator, to the slasher room upstairs.

The system gives the traveling hoist complete accessibility to every machine as well as to every track in the system, eliminating the possibility of delay.

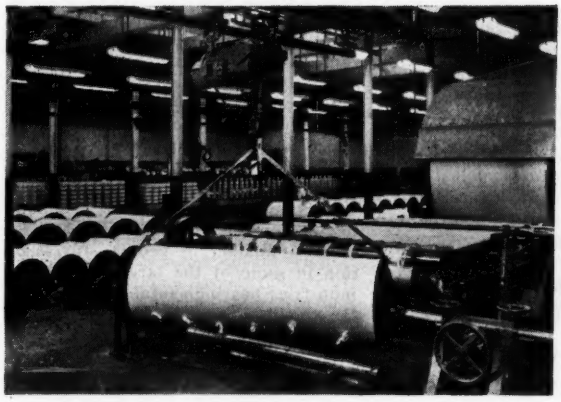
(Turn to page 62)



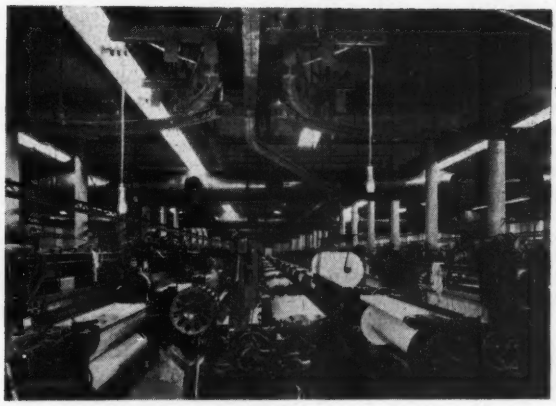
THE TRACK SYSTEM in the power loom department.

OLD PLANTS . . . EFFECTIVE HANDLING

S ROLL ON MONORAIL

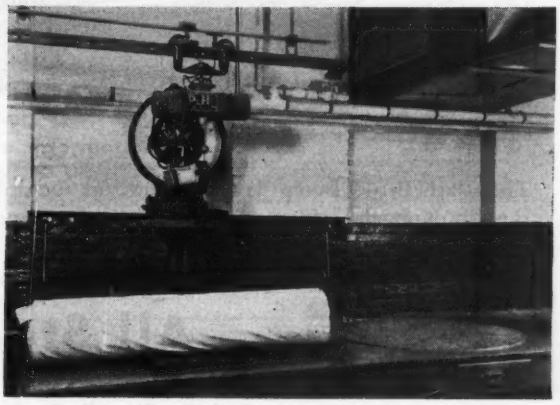


ELECTRIC HOIST lifts beam off slasher. Monorail in elevator takes load to first floor. Fourteen warp beams, 450 lb. each, are delivered to looms daily via elevator. Its housing was extended 10 ft. to raise lifting pulleys for headroom for beams.



MONORAIL CARRIES cloth from looms to storage. Most tracks serve two rows of power looms. This is other part of "above-floor" handling operation which has saved costly wooden floors, strenuous effort.

Wooden floors were saved—and so was maintenance cost—because loads move overhead.



ELECTRIC MONORAIL HOIST delivers inspected cloth for weighing, wrapping. Note turntable, five ft. in diameter, which is rotated to make an easy wrapping job. Wrapped rolls are stored on end.

Material Handling In The Evolution Of Industry

By E. W. Buschman, President
The E. W. Buschman Co., Inc.

SINCE the turn of the century, the welfare and working conditions of labor have been elevated and improved tremendously. Whereas working conditions, wages and hours once were questions of individual judgment, now they are controlled by statutory regulations.

Steel Muscles Do Hard Work

Most industrial labor can be divided into three principal groups: skilled, productive and non-productive. Considering all the improvements that have been made for its welfare, and the opportunities afforded, the non-productive or common labor class proportionately has probably enjoyed the most extensive benefits. This fact becomes more obvious when we look back only a few score years and recall the back-breaking tasks required in some industries, practically none of which exist today. This revolutionary change strikingly exemplifies the fact that human intelligence in America has studiously replaced human brawn.

A typical example of this is the present-day application of mechanical conveying; its primary principle is to utilize mechanical means to eliminate or reduce hard labor in industry. Conveyors were originally thought of chiefly in connection with moving and handling great quantities of bulk materials in large plants, whereas now the operations of relatively small plants are equally susceptible to the advantages of mechanically conveying practically all kinds of packaged goods.

Some of the more popular types such as roller gravity, endless belts, slat conveyors, live rollers, overhead chain and cable monorail, chutes and slides can now be observed in almost every industrial plant, large or small; and there is hardly an industrial transportation or merchandise conveying condition that cannot be handled mechanically.

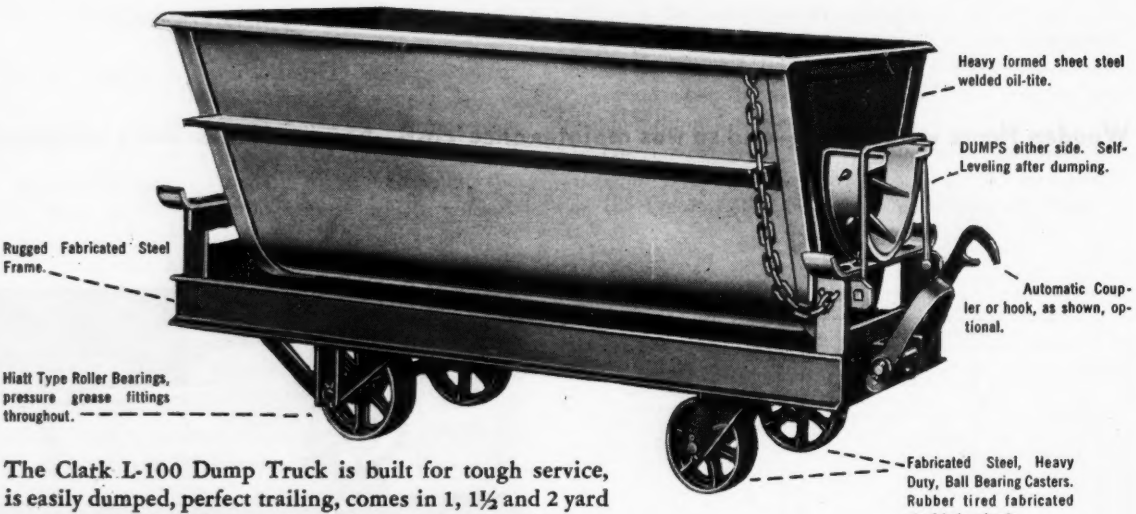
Contrary to some opinions, labor is not opposed to the mechanical conveying of materials. Where is the man who would rather push a heavily loaded wheelbarrow than ride with the load and at the same time receive more pay?

Conveyors Lower Costs

The development of equipment for handling materials in bulk, package, bundle, barrel or bale has progressed to such a broad scope of application that the relatively small plant is equally conscious of this problem and the advantages are proportionately possible in relation to the larger plant.

Mechanical conveying definitely reduces that portion of production costs which consists mainly of wasted efforts; it lightens human labor and it helps stimulate consumer consumption by keeping the cost of finished commodities within the buying power of the greatest number of people. Investigation in some of the larger production industries has indisputably shown that the abolishing of their mechanical

Clark SELF-DUMPING TRUCK L-100


Heavy formed sheet steel welded oil-tite.
DUMPS either side. Self-Leveling after dumping.
Rugged Fabricated Steel Frame.
Automatic Coupler or hook, as shown, optional.
Hiatt Type Roller Bearings, pressure grease fittings throughout.
Fabricated Steel, Heavy Duty, Ball Bearing Casters. Rubber tired fabricated steel hub, wheels.

The Clark L-100 Dump Truck is built for tough service, is easily dumped, perfect trailing, comes in 1, 1½ and 2 yard capacities. We invite your inquiries on special equipment.

Clark All Steel Welded Truck Co.
Rockford, Illinois

Circle No. 71 on Reader Service Card for more information

methods of handling would inevitably result in substantially higher consumer prices for the most vital commodities. Walter Chrysler, the famous automobile manufacturer, once said that if they discontinued the use of their conveyor systems the manufacturing cost of their cars would triple in cost.

Many kinds of materials in the entire course of production are actually worked upon on an average of about 60 to 65%. The remainder of the time is consumed in lifting, shifting, pushing and pulling until completely finished. From this it can be seen that 35 to 40% of working time is non-productive, a dead weight expense.

Scrutinize Production Costs

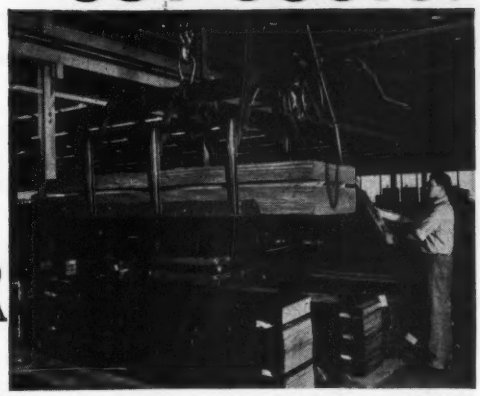
With labor constantly rising in earning capacity, along with lessening working hours, the production costs of industry must necessarily be scrutinized for corresponding savings. Material handling by conveyors often offers the most practicable and effective means of eliminating, or at least materially reducing, indirect production costs.

A great deal of attention has been focused in recent years on the problem of unemployment, and many causes cited and various cures prescribed. But the question still remains an important national and economic issue. Industry, too, is vitally and directly interested in

(Continued on page 66)

One Sure Way to CUT COSTS!

use a C-F SHEET LIFTER



The A. B. Dick Company, Niles, Illinois, found that this C-F Lifter has substantially reduced man hours and crane time required to move stock in and out of storage.

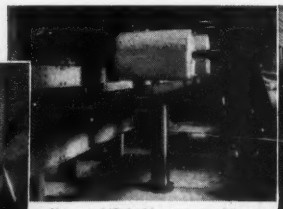
Up to 10,000 lbs. of high grade sheets in varying widths may be picked up, carried and unloaded at shears or machines with speed and economy by the Lifter and its operator.

C-F Lifters are made in standard or semi-special models to handle from 2 to 60 tons. Bulletin SL-25 describes the advantages you can obtain from C-F Lifters. Write for it today.

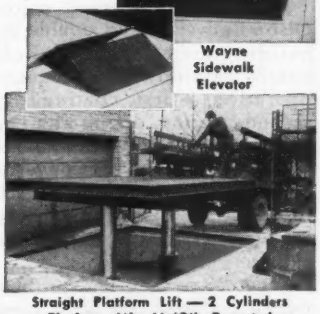
CULLEN-FRIESTEDT CO.
1320 South Kilbourn Avenue • Chicago 23, Illinois

Tilting Loading Dock Ramps

Straight Platform Lift with Full Skirt Electric Pump Operated



Wayne Lift in Newspaper Plant



Wayne Sidewalk Elevator

Straight Platform Lift — 2 Cylinders Platform Lift Air/Oil Operated

Cut Handling Costs

BETTER material handling offers industry its biggest opportunity to cut production costs and to increase productivity. Investigate what it can do for you. Let Wayne engineers help you develop the proper equipment to assure better handling of material in your plant. There's a Wayne Hydraulic Lift for every requirement. Write for more information.

WAYNE INDUSTRIAL HOISTS

MAIL NOW FOR MORE FACTS

THE WAYNE PUMP CO. • FORT WAYNE 2, IND.
516 TECUMSEH STREET

Please send folder and complete information on Wayne Industrial Hoists. Type_____

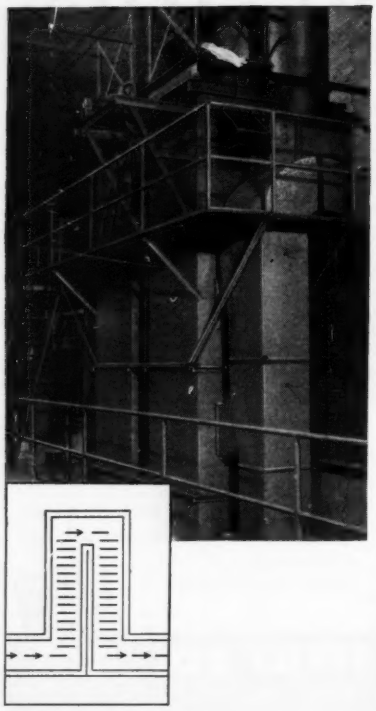
NAME _____ ADDRESS _____

CITY _____ STATE _____

AIR COMPRESSORS • HOSE REELS FOR OIL, GREASE, WATER, AIR • BULK PUMPS

Circle No. 69 on Reader Service Card for more information

OLSON CONVEYORS



STEP UP EFFICIENCY
CUT DOWN COSTS

Wherever you have point-to-point movement of parts, packages, or units —in containers or loose—the *continuous material flow* of Olson Conveyors reduce cost of your product through economy of operation—increased production efficiency. Literally, Olson Conveyors *take the hands out of handling costs!*

For example, pictured above, an Olson Conveyor does double duty in building material plant. Roofing boards pass through a sequence of operations—first, coating, drying, second, coating, drying and cooling on a series of fully enclosed Olson horizontal and vertical conveyors—a completely automatic process. Ducts on either side of each unit keep hot air passing over the moving boards. Product emerges finished.

Whether your specific problem requires a single unit or a complete system . . . whether it's lifting, lowering, or on-the-level handling . . . Olson Conveyors *can fill the bill.*

Write Olson today . . . *it's your move to better production.*

SAMUEL OLSON MFG. CO., INC.

2426 Bloomingdale Ave.
Chicago 47, Illinois

Circle No. 72 on Reader Service Card

LOADS ROLL ON MONORAIL . .

(Continued from page 59)

Monorail Serves Inspection, Storage, Packing

The rolls of finished cloth are taken off the looms and routed to the south end of the department whence a single monorail leads into the cloth room. Here storage, inspection and packaging are performed.

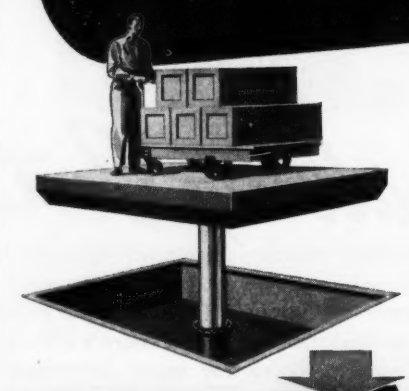
The arriving rolls of cloth are deposited on a rectangular storage platform. This area is covered by an independent U-shaped monorail which extends from here over the feed end of six inspection tables. Another 1000 lb. electric hoist is installed on this line, and one operator serves the six inspection tables. The hoist performs all the tasks that would otherwise have to be done by muscle power.

At the discharge end of the tables the wound rolls of inspected cloth are picked up by another electric hoist which operates on a second U-shaped monorail. This overhead track extends over the combination weighing and wrapping table. The cloth is deposited by the hoist on the scale platform.

Monorail handling has eliminated floor congestion, effort and extra manhours away from the job. With the old method, warp beams and rolls of cloth were handled with on-the-floor equipment. A roll of cloth had to be manipulated by two men, one on each end. Maintenance of the wooden floors loomed as a constant problem—an expensive one.

Now one operator handles a roll of cloth suspended from the monorail hoist, and does it with very little effort. The present overhead handling operation was started a few years ago. Since that time the dual reduction in cost—in handling and floor maintenance—has amply proved the value of the present method. The fact that the building date of the plant goes back to the previous century was no deterrent.

NEW LIFTING EQUIPMENT
Uses Economical Oildraulic Power

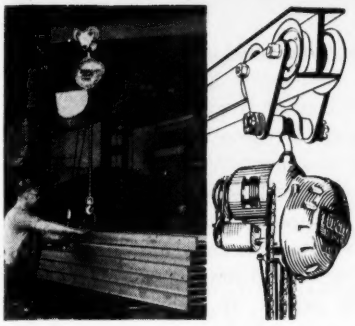


Use Oildraulic power to lift loads directly from plant floor to trucks, freight cars or different building levels. Rotary Levelators speed plant traffic, conserve manpower, cut costs. Save plant space, too . . . no need for ramps. Plant floor can be poured at grade. Safe, dependable, economical. Installation simple and inexpensive. For complete data, write for Catalog RE-201.

ROTARY LIFT CO.
1141 Kentucky
Memphis (2), Tenn.

Rotary
LEVELATORS

Circle No. 73 on Reader Service Card for more information



Pennies a day...

With the 'Budgit' Electric Hoist, current consumption may be reckoned in pennies a day — savings in dollars. For the 'Budgit' adds many minutes of production to every working hour thus paying for itself quickly. Then it continues to earn money for you during its long, trouble-free life.

Another money-saving factor is that workers *like* 'Budgits'. They make the job much easier, free the workers from fear of rupture, sprains and overtiredness. So all their mental and physical energy is devoted to more production at less cost — and greater contentment for them.

There are no installation costs with 'Budgit' Hoists. Hang up, plug in and use! Your 'Budgit' begins to make money for you a few minutes after it is delivered.

Our nearest distributor will be glad to bring a 'Budgit' Hoist to your plant and demonstrate how it saves time and money on your own work.

Made in sizes to lift 250, 500, 1000, 2000, and 4000 lbs. Prices start at $119. Write for Bulletin No. 391.

MAXWELL MANNING MOORE INC. TRADE MARK

'BUDGIT' *Hoists*

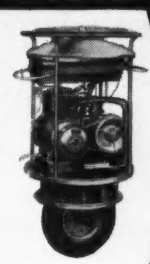
MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of 'Shaw-Box' Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, 'American' Industrial and 'Microsen' Electrical Instruments.

Circle No. 74 on Reader Service Card

POWER *Wherever You Turn!*

This **WISCONSIN** HEAVY-DUTY *Air-Cooled* **ENGINE** Mounts on the Steering Wheel!



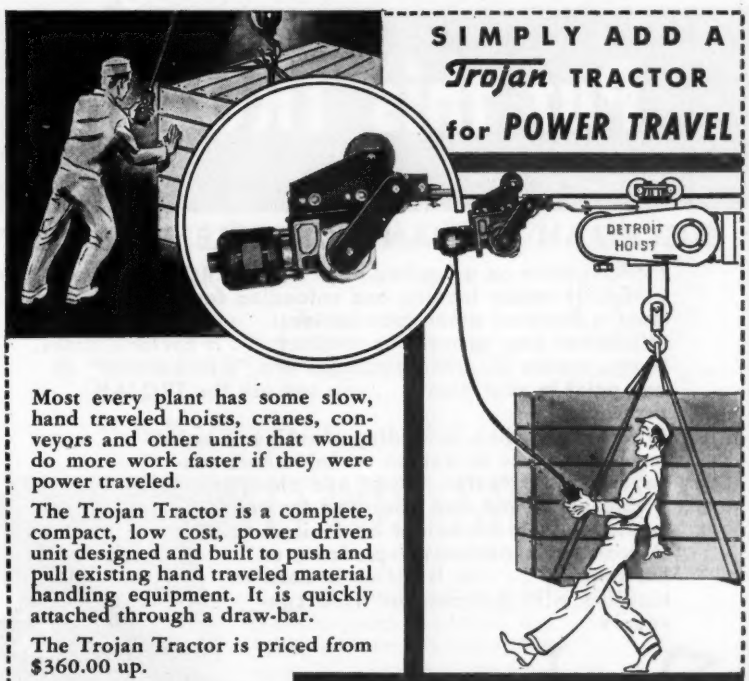
Moving 4000 lbs. at a snail's pace or up to 8 mph. and maneuvering into any corner the truck will fit . . . all at a cost of one gallon of gas per 8 hour shift is the record of this Wisconsin-powered Hyster Salsbury Turret Truck, made by The Hyster Co., Portland, Ore.

New and unusual industrial service units are being introduced by manufacturers every day, to which Wisconsin Engines are assigned as the logical power choice. Wisconsin Engine features such as snug compactness, light weight, heavy-duty construction, tapered roller bearings at both ends of the crankshaft, fool-proof air-cooling at all seasons, and an easily serviced OUTSIDE magneto, with impulse coupling for quick starting . . . combine to give Wisconsin Engines preferential ratings as power components on a great variety of original equipment in many fields.

4-cycle, single-cylinder, two-cylinder, and V-type 4-cylinder types, 3 to 30 hp. Your inquiry is invited.

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46 WISCONSIN

SIMPLY ADD A *Trojan* TRACTOR for POWER TRAVEL



Most every plant has some slow, hand traveled hoists, cranes, conveyors and other units that would do more work faster if they were power traveled.

The Trojan Tractor is a complete, compact, low cost, power driven unit designed and built to push and pull existing hand traveled material handling equipment. It is quickly attached through a draw-bar.

The Trojan Tractor is priced from $360.00 up.

Bulletin 810 will give you further information.
Fill in your company name, address, and send us this advertisement for a copy.

DETROIT HOIST & MACHINE COMPANY
8226 MORROW ST. • DETROIT 11, MICH.
Company_____
Address_____

Circle No. 76 on Reader Service Card for more information

Circle No. 77 on Reader Service Card for more information

SEMI-LIVE SKIDS

Typical Ironbound Money-Savers

★ Short-haul units for carrying loads up to 2,500 lbs. safely and easily. Made of new billet steel and selected hardwood. Bolted construction allows replacement of deck. A short haul system is comparatively inexpensive because a few lift jacks will service many skids.

● This semi-live unit has permanently attached box top. Can also be made with removable top or tiering type top if required.

● Semi-live skid with stake pockets and removable side racks. Available also with end racks, wood or pipe stakes or super structures to meet individual requirements.

Bulletin 7-SL illustrates these units

Ironbound

IRONBOUND

BOX & LUMBER COMPANY

Materials Handling Division

30 HOFFMAN PLACE • HILLSIDE, N. J.

SKIDS • SEMI-LIVE SKIDS • DOLLIES • FLOOR TRUCKS

PLANS for constructing a 100,000 sq. ft. warehouse in Youngstown, Ohio, were announced by Truscon Steel Co., subsidiary of Republic Steel Corporation. Fabricated from Truscon building materials, with a brick facing, the new one story building will be located on Willow Street directly south of Truscon's plant. It will become another link in the chain of 26 warehouses maintained nationally by Republic's Warehouse Division. Opening of the new warehouse facilities will permit the convenient warehousing of building materials in a separate building as contrasted with the present necessity for storing within the plant. This will release for normal manufacturing purposes space now used for warehousing, in addition to vastly increasing storage area. Easy access to the warehouse is assured by its location. Walter Klemm, who has been with Truscon since 1942, will be superintendent of the warehouse.

GEN. Thomas Stevens Hammond, chairman of the board, Whiting Corp., Harvey, Ill., passed away at his home recently. Entering the employ of Whiting Corp. in 1907 as assistant purchasing agent, he rose to be president and general manager. For the past several years he was chairman of the board. Always interested in trade associations, he served many different organizations and was at one time president of nine associations and clubs and director of seven associations and companies.

Put this TROJAN to work !

BUSCHMAN TROJAN PORTABLE BELT CONVEYOR

Indispensable as a loading dock is, the TROJAN is even more useful. It makes loading and unloading far easier and faster; does a hundred other jobs besides!

Whatever your process or product . . . if cartons, cases, boxes, crates or other packages are "man-handled" at any point in your plant . . . you can use the TROJAN profitably.

Wherever loading, unloading, stacking or boosting is done, the Buschman portable belt conveyor does it faster, easier and cheaper.

It can be moved and operated by one man; adjusted for height as desired.

It transports packages up, down or horizontally . . . by itself or in combination with portable or fixed conveyors.

REPRESENTATIVES IN PRINCIPAL CITIES

For complete details, write for Bulletin 50.

Buschman Conveyors

THE E. W. BUSCHMAN CO., INC. 4450 Clifton Ave., Cincinnati 32, Ohio

Circle No. 79 on Reader Service Card for more information

News From the Sales Field

LESTER B. COLEMAN has been appointed New England and New York State representative for Flexible Steel Lacing Co., Chicago, manufacturers of belt fasteners.

DAVIS EQUIPMENT CO., 4315 Charleston Ave., Houston Ave., Houston, Texas: it has been appointed representative in the state of Texas for the Silent Hoist & Crane Co., Inc., Brooklyn, N. Y. The line will include the company's mobile cranes, fork trucks and other equipment.

INTER-STATE Industrial Equipment Co., 3519 Troost Ave., Kansas City, Mo.: it has been appointed by the Automatic Transportation Co., Chicago, as representative for all of Kansas and the western half of Missouri. The newly organized sales firm is headed by Earl R. Calvin.

J. P. WAITE, INC., 3304 West Pierce Street, Milwaukee 4, Wis.: it is a new dealer for the Hyster Co.'s industrial materials handling trucks in eastern Wisconsin and northern Michigan, according to an announce-

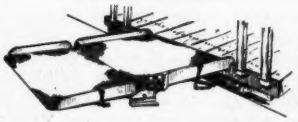
SPEED UP

LOADING — UNLOADING
BOX CARS — MOTOR TRUCKS
With

MOFFAT BETHLEHEM BRIDGE RAMPS

ENGINEERED FOR FAST POSITIONING and SAFETY!

2,000 lb. 4,000 lb. 6,000 lb.
10,000 lb. 15,000 lb.
Capacities
To Bridge Gaps One Inch to Six Feet and More!



Our Type "A" for Easy Grade From Dock to Vehicle Floor

Ask the Man who sells you
HANDLING EQUIPMENT
OR
Send for Literature and Prices To

MOFFAT STEEL Co.
PORTABLE BRIDGE ENGINEERS
1621 Fourth Street
BETHLEHEM, PA.

Another
LEWIS® SHEPARD
Industrial Truck

SAVES MONEY
SAVES MEN
SAVES TIME

ONE TON CAPACITY MODEL GC2-56

The
"TOTEMASTER"

POWERED BY A 20 H.P., 4 CYLINDER GAS ENGINE

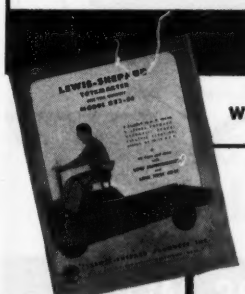
Indoors or out — this rugged ONE-TON Toter scoots around with loads up to capacity and at speeds up to 20 M.P.H.

- Crosley 4 cylinder engine — 20 HP, CI block — 5 main bearings.
- High compression engine — Ratio 7.8:1. More complete combustion means reduced fuel and less fumes.
- Electric starting. No cranking, therefore operator will stop engine while loading truck. Saves fuel and reduces fumes.
- 3 speeds forward — 1 reverse. Saves strain on engine. Increases grade performance with heavy loads. Lowers maintenance cost.
- Two wheel drive — differential. More effective traction. Less wear and tear.
- Water cooled engine — quiet and cooler.
- Hydraulic brakes — airplane type.
- Double handle grip provides one or two hand steering.
- When operator leaves seat, parking brake is mechanically applied.

MULTIPLY MANPOWER · LEWIS-SHEPARD

The "MASTER" Line ®

21 Sq. Ft. of Loading Space . . . . Draw Bar Pull: 1200 lbs.
WRITE for "TOTEMASTER" Bulletin #30



DON'T DELAY
WRITE TODAY

LEWIS-SHEPARD
PRODUCTS INC.
WATERTOWN, MASS. CRAWFORDSVILLE, IND.
REPRESENTATIVES IN PRINCIPAL CITIES

LEWIS-SHEPARD PRODUCTS INC.
115 Walnut Street Watertown 72, Mass.
Please send me "TOTEMASTER" Bulletin #30

Name .....
Firm .....
Address .....
City..... Zone..... State.....

ment from C. H. Collier, jr., eastern division sales manager. President of the corporation is J. P. Waite, whose experience in heavy construction work dates back to 1932.

GERLINGER Carrier Co., Dallas, Oregon, has appointed five distributing firms which will represent its line of lift trucks and straddle material carriers. The new distributors, and their sales territories, are: The Frank Colker Co., Detroit, (lower Michigan state); Madden Equipment Co., Chicago, (the portion of Illinois and Indiana immediately surrounding the Chicago area); Stowers & Co., Milwaukee, (state of Wisconsin and upper peninsula area of Michigan); Wiese Planning & Engineering Co., St. Louis, (southern Illinois and eastern Missouri); Peter P. Wood Co., Indianapolis, (state of Indiana).

APPOINTMENT of four distributors to handle electric industrial trucks and tractors has been announced by J. G. Ehrhorn, sales manager, Crescent Truck Co., Lebanon, Pa. The new distributors and their territories are C. D. Osborn Co., 728 Division Ave.—South, Grand Rapids 3, Mich., for western Michigan; David F. Thomas Co., 114 S. Bemiston, St. Louis 5, Mo., for south-central Illinois and eastern Missouri; Mike Petersen, 4525 S. Washington St., Englewood, Colo., for Colorado; Sales Engineering Co., Inc., 875 Le Grand St., Salt Lake City 5, Utah, for Utah.

THE Ponsford-Moos Equipment Co., 516 San Francisco Street, El Paso, Texas: it has been appointed representative in Panama, Costa Rica, Nicaragua, El Salvador, Honduras and British Honduras for the Eriez Mfg., Co., Erie, Pa., producers of magnetic equipment.

many dependable trucks
K&J
one dependable source
Over 95 standard models of two wheel trucks, platform trucks and trailers. Special trucks and trailers up to 50 ton capacity designed and built to your specification. All built with 80 years of skill by pioneers in the industry. Complete engineering service for special design. Write for catalog or tell us what you need.
WRITE FOR CATALOG
THE KILBOURNE & JACOBS MFG CO.
796 CONGRESS ST., COLUMBUS 16, OHIO

Circle No. 82 on Reader Service Card for more information

Material Handling In Industry . .

(Continued from page 61)

nation themselves who receive on an average of 65% of the national income in wages, represent industry's greatest potential market.

The influence of the advancement of mechanical ingenuity on employment has become a favorite topic of many economists and various theorists, presenting as it does a popular appeal and submitting to unlimited hypothetical speculation.

However, the subject of technology and its effect on employment can hardly be approached without facing immediately some compelling facts and figures that are clearly presented. An examination of records based on case histories reveals the tremendous contribution machinery has made to the progress, welfare and potential employment of the nation, a separate discussion of which space prevents.

Briefly, however, it is interesting to observe that between 1879 and 1950 while the population of the nation increased approximately 290%, the gainfully employed increased 391%. During the twenty-year period between 1920 and 1940, which was probably the most intensive decade in technological advancement, there was a gain of 9,714,726 new jobs.

If machines generally displace men, as some economists would have us believe, then the industries where machines are used most should show the greatest unemployment. However this is exactly contrary to fact as technological development in such manufacturing industries as automobile, airplane, textile, home appliances, printing trades and many others shows the heaviest growth in employment. Technology has actually created many new industries and new jobs which did not previously exist. On the other hand, those industries which were mechanized more slowly lagged proportionately in their absorption of the available working force.

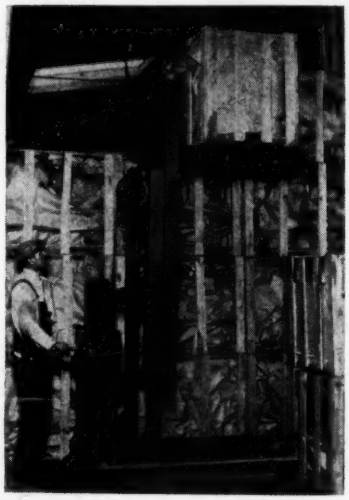
The constantly rising wage rates and diminishing working hours in making goods in large quantities for everybody to enjoy, are made possible by labor-aiding mechanical methods on which our present American standard of living is definitely predicated.

There is no basis of fact in presum-

ing that our national progress will not continue to go forward by the same sound American system. In fact, there is every reason to feel confident that the same American imagination, ingenuity and determination will in the future continue the progress that has, in a century and a half, carried a pioneer country to the front ranks of the foremost nations of the world in power, culture and influence.

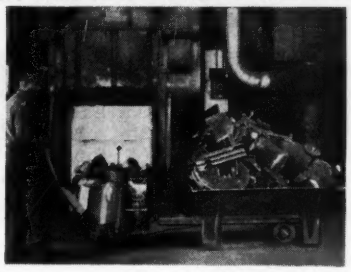
TESTED HANDLING TECHNIQUES

ALTERNATIVE TO HIGH BUILDING COSTS—The illustration shows



how storage space is being multiplied without constructing new buildings at the current cost. One man with a portable elevator (telescopic type) is piling crated stoves ceiling high. This answer to the high cost of additional buildings has proved effective and profitable in a growing number of establishments. Piling materials and goods by means of portable elevators yields substantial reduction in the actual floor space needed for storage. Utilization of overhead space can also mean less fuel or refrigeration, illumination, building maintenance and rent if the building is rented. Boxes, cartons, crates, bales, sacks, bundles. etc., may be safely lifted and stored. Materials and products which cannot be piled may also be stored ceiling high with the aid of storage racks or stacking frames. In addition to piling materials, portable elevators perform many labor-aiding jobs, including loading trucks and die handling. — Courtesy, Barrett-Cravens Co.

MECHANIZING A HOT JOB.—At General Founderies Co., Milwaukee, a crew of men used to push and shove a heavy load of hot cores to and from the ovens or to the various stations of



the core room. Now a walkie-type truck handles loads weighing up to five tons. Temperature of the cores as they come from the oven is 450 degrees. With the truck, the operator can walk in front of the cores and be away from the intense heat. In the cleaning room, muscles and wheelbarrows have been replaced by similar powered rolling equipment. A marked rise in employee morale was noted as one important benefit.—Courtesy, Automatic Transportation Co.

Use the postcard bound into this issue for more information on advertisements, New Products and Free Literature. Note the number to circle below each item.

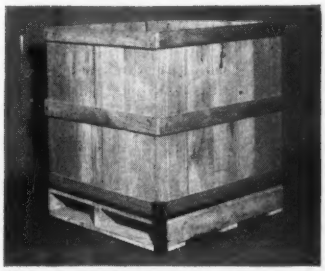
IT'S NEW——
a low cost Collapsible Pallet Box

Here's a brand new money saver for in-plant storage and handling of materials, loose, bulk or packaged, and for outside shipments too. Its low initial cost will save thousands of dollars for plants using pallets in quantity.

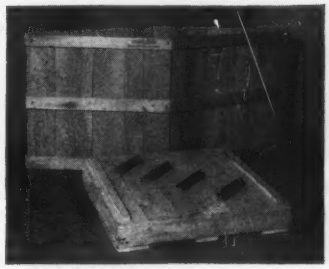
The new B-G Wooden Collapsible Pallet Box is light in weight but built strongly enough to handle weights up to 3000 lbs. and more and is sturdy enough to stand up under many repeated shipments.

The collapsible feature is made possible by the exclusive Bigelow-Garvey TIGHT CORNER hinge design used on all of our collapsible wood shipping crates.

Used as a storage box, a tote box or as a shipping container, you will like this sturdy but inexpensive addition to effective materials handling.



Above: Photo shows how pallet box is easily attached to any standard pallet by means of 4 flanged corner irons (furnished by us) and a single steel strap, either flat or round.



Right: Photo shows hinged box collapsed for storage or return shipment.

Tops can be furnished if desired.

FOR COMPLETE DETAILS AND PRICES WRITE . . . .

BIGELOW-GARVEY LUMBER CO.

General Office and Laboratory

326 West Huron Street • Chicago 10, Ill.

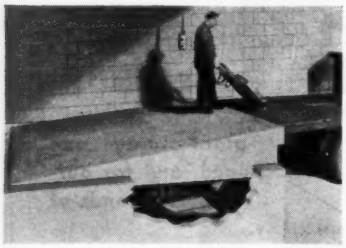
Mills: Arkansas • Georgia • Wisconsin • Minnesota • Illinois

Circle No. 83 on Reader Service Card for more information

NEW PRODUCTS

For additional information on these products, write Dept. 5, Flow Magazine, 1240 Ontario St., Cleveland 13, or use postcard bound into this issue.

ELECTRICALLY OPERATED RAMP for installation on shipping and receiving docks, and which can be quickly adjusted to align with varying heights of truck platform levels, is built by Allied Steel & Conveyors, Inc. It is available in a range of capacities to handle loads from five to ten tons, consists of a structural steel platform which has raised tread floor plates, and an electric, motor operated raising and lowering mechanism. The ramp, pin-hinged at one end, is fitted into the permanent loading dock or building floor level. The operating mechanism is located underneath the ramp, easily accessible but protected against injury and interference.



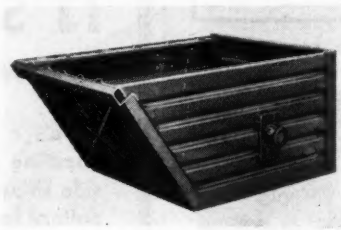
Circle No. 84 on Reader Service Card for more information

TRUCK HOIST—This electrically powered mast-and-boom cable lift has been developed by the Hoist-O-Matic Co. for heavy work on any type of truck. It may be used on freight trucks, tire service trucks, farm trucks, utility trucks, municipal trucks, and others. It is rated for a straight vertical lift of 1000 lb., or for a lift or pull of 2000 lb. with split block and half tackle. It is powered by a reversible motor which is enclosed in a housing beneath the truck bed. This motor operates on the regular battery, but is said to draw a negligible amount of juice during normal usage.

Remote push-button control is a safety feature of the new hoist; from a distance of eight ft. the operator can control a load braking to an immediate stop at any point. The hoist's six-ft. mast is topped by a four-ft. horizontal boom which swings through 360 degrees for pick-ups or drops over either the back or the side of the bed. Forty ft. of wire cable are provided.

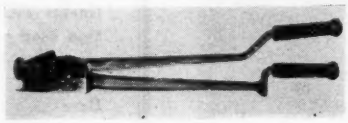
Circle No. 85 on Reader Service Card for more information

SKIP TOTE BOX—with trunnions for handling by fork truck or crane has been announced by Palmer-Shile Co. Designed as a rugged heavy-duty scrap metal handler for foundry and forging plants, the box is of corrugated all-steel construction with welded joints. The slanted box end for easy discharge is reinforced with steel braces. They are built to any size required, and load capacity and color may be specified.



Circle No. 86 on Reader Service Card for more information

HEAVY DUTY STRAPPING CUTTER—Built to withstand hard usage, this strap cutting tool has been developed by Signode Steel Strapping Co. Cutting blades are sturdily supported to prevent them from springing apart. The stationary blade is easily removed for sharpening. The moving blade can be reversed, thus providing a new cutting edge. The cutter can be set up as a stationary tool where operations require use of cut-to-length strap.



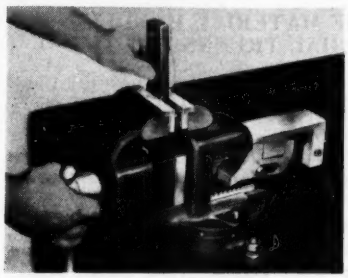
Circle No. 87 on Reader Service Card for more information

A LABEL GUMMER which applies adhesive at a carefully controlled uniform temperature has been announced by King Sales & Engineering Co. This nine-in. gummer was designed to cover jobs where maximum adhering tenacity is required, and for all adhesives which require heat at time of application to the label surface. The glue pot is surrounded by a water jacket in which the water is heated to any desired degree, from room temperature to boiling point, through an adjustable thermostatically controlled heating element. The manufacturer claims that the water jacket applies a uniform heat to all areas of the glue

pot and prevents any hot spots which would locally burn or break down the adhesive.

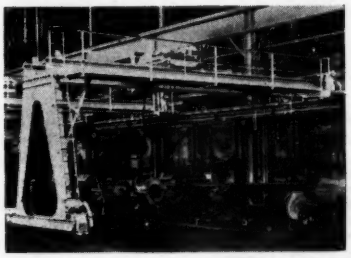
Circle No. 88 on Reader Service Card for more information

QUICK ACTION MACHINIST'S VISE embodying a patented fast slide action has been announced by the Dodge Mfg. Corp. It is known as the Dodge Slide-Set Vise. The 4″ vise opens or closes to any position in one second through a push-pull action which eliminates spinning the handle. It weighs 58 lb. and is said to speed production, reduce operator fatique and increase efficiency on bench and assembly operations. A turn and a half of the handle counter-clockwise and the jaw slides in "neutral" to any position. From the moment work is engaged the vise operates in the conventional manner. The equipment is provided with either a swivel or stationary base. High-strength steel parts and semi-steel castings provide ruggedness which is designed to withstand hard usage.



Circle No. 89 on Reader Service Card for more information

FLOOR-TYPE GANTRY CRANES, manufactured by Northern Engineering Works, are shown in a rolling mill where they are used as auxiliaries to overhead traveling cranes for an integrated handling process. These cranes are furnished with standard trolley units; equipped throughout with roller bearings, splash lubrication, hardened steel gears, mechanical and electric brakes. They can be furnished for various capacities and spans, in single or double leg types. They are arranged with floor type push button control or with pulpit control located on the gantry leg; for either a.c. or d.c. current operation.

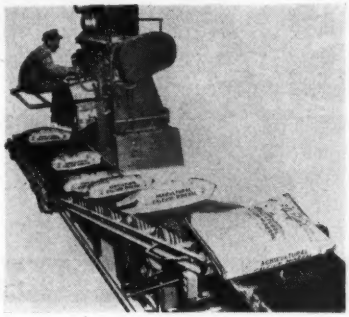


Circle No. 90 on Reader Service Card for more information

SLING CHAIN ADJUSTER—American Chain Division of American Chain & Cable Co., Inc., has announced the Acco Sling Chain Adjuster. This device permits the lifting of an object at any angle desired; by shifting the chain in the pocket wheel, one leg is made longer and the other leg shorter. The chain locks and the load cannot shift, it is said. Unbalanced loads, or loads hard to handle can be transported using this adjustment, eliminating the necessity of twisting or spiking a leg of the chain to shorten it. The adjuster is available only in complete units of pear-shaped link, adjuster and sling chain with hooks on both ends.

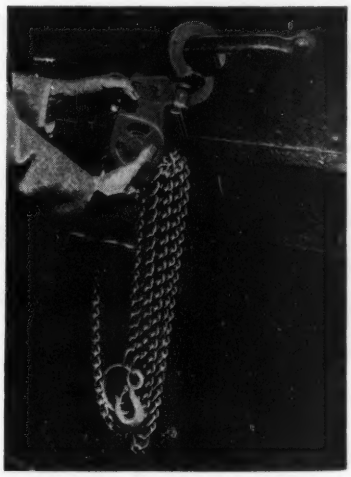
Circle No. 91 on Reader Service Card for more information

VALVE BAG PACKER CONVEYOR—A motor driven conveyor designed to operate in connection with valve bag packers has been developed by the Flexoveyor Mfg. Co. A series of endless spring belts running over grooved rolls forms the conveying element, which is reversible. Any loose material collecting on the outside of the bag or around the packer drops through the springs and onto the floor, where it can be cleaned out at regular intervals. The fluttering action of the springs makes them self-cleaning. Only 7″ of headroom is required to install the unit close to the floor or leave sufficient room to telescope a carloading conveyor underneath.



Circle No. 92 on Reader Service Card for more information

DOOR OPENER—A new model of the Type H Nolan One-Man Car Door Opener, embodying several safety features, has been announced by The Nolan Co. A major improvement is the new, large, positive locking safety hook which cannot become detached in operation when attached to the box car door. This can be swung 180 degrees but locks itself firmly in place when assuming the pulling position. The end of the operating chain also has been provided with a safety hook, equipped with a latch, to prevent accidental release from the stationary point to which the chain end is attached. Improved balance in the tool is designed for automatic unlocking of the pawl for chain stripping during the operation of the car door opener.



Circle No. 93 on Reader Service Card for more information

STAINLESS STEEL BELTS—Metalsmiths, division of Orange Roller Bearing Co., Inc., has developed a line of stainless steel endless belts for conveyors. Features include any desired width in one piece; welded endless construction, with finished welds smooth, flat and invisible; controlled width and camber; surfaces polished to suit needs. Materials conveyed may be scraped from surface; blades at head pulley can be used to keep belt clean. These belts are de-

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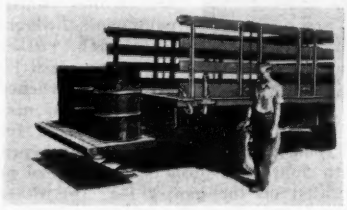
Circle No. 94 on Reader Service Card for more information

HANDBOOK OF MATERIAL HANDLING WITH INDUSTRIAL TRUCKS

A COMPREHENSIVE 72-page manual has been published by the Electrical Industrial Truck Association. It has been designed for the analysis of material handling operations and the application of the load unit method with power-operated industrial trucks and accessories. This publication, entirely new in text, illustrations, charts and diagrams, together with engineering data, supplants a former addition. It is divided into four sections: 1. The Evaluation of Industrial Truck Handling. 2. Material Handling Management (sub-sections are devoted to the preparation and use of flow process charts, handling operations in production, handling in storage, the use of load units in storage). 3. The Organization of an Industrial Truck Systems. 4. Practical Truck Engineering. Single copies of the manual are available for $1.00. Executive officials of any industry or business may have a copy free of charge by applying on their company letterhead. Address FLOW Magazine, 1240 Ontario, Cleveland 13, Ohio.

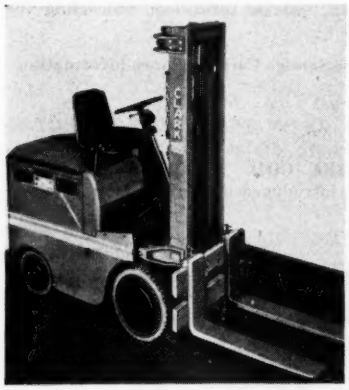
Circle No. 95 on Reader Service Card for more information

HYDRAULIC END GATE—The Perfection Steel Body Co. has developed a combination hydraulic lift end gate for trucks hauling heavy or bulky cargo. Known as the Cobey Hydra-Power End Gate, it can be installed on any make or model truck with suitable body type, and is operated from the truck power take-off. It is claimed that by the use of the gate one man can load and unload heavy cargo in minimum time. The lifting and closing of the gate are accomplished by hydraulic power. One hydraulic cylinder is used for all operations connected with the lowering, raising, and closing of the gate. Other features: rugged box-type gate of steel and wood construction, with a load capacity of 3000 lbs.; gate rides perfectly level even though the weight of load may be unbalanced; gate may be stopped at any point between ground and truck floor; elimination of side obstructions permits loading from sides as well as end; safety-designed gate cannot be closed or opened accidentally; operating controls are conveniently located at the rear of truck platform, and are so designed that they may be operated from the ground by hand or from the gate itself, either by foot or hand.



Circle No. 96 on Reader Service Card for more information

3000-LB. FORK TRUCK—Compactness and maneuverability resulting from reduced over-all width and increased speed are among the features of its new 3000-lb.-capacity Carloader fork truck, according to an announcement by the Clark Equipment Co. The acceleration is accomplished through a master power-switch regulated by an automatic timer. Driving is almost identical with that of an automobile equipped with automatic gear-shifting device. The steering-column directional control lever engages the first point of power for either forward or reverse operation. Controls are the non-plugging type which prohibit change in the direction of travel until the motor comes to a full stop. A separate motor powers the hydraulic pump, and provides lifting and tilting power. A newly-designed lift-control lever operates in the direction of required action. When the lever is pulled straight up the forks rise; when it is pushed straight down, the forks lower.



Lift heights are available in a range from the standard 84 ins. with over-all height of 61 ins. with forks down, to 130 ins. and an over-all height of 84 ins. with forks down.

Circle No. 97 on Reader Service Card for more information

OVERHEAD CONVEYORS which weigh only three lb. per ft. are being manufactured by the Lightweight Conveyor Co. According to the company, these carriers can make a horizontal bend from a straight line to a 180-degree reverse in a 3½-in. radius; it can make a vertical bend 90 degrees straight up or down within a 36-in. radius. It is also stated that parallel lines can run as close as 1⅜ ins. apart. Construction features include: high carrying capacity, fractional HP operation, three hangers per ft., no super structure required.

Circle No. 98 on Reader Service Card for more information

AUTOMATIC DOCKBOARD—The Beacon Experimental & Engineering Co. has developed an automatic dock board. It has vertical, horizontal, and lateral movement; 24 ins. vertical, 14 to 24 ins. horizontal, and four ins. lateral. All are powered by individual lever controlled, full hydraulic pump. The main motive power is developed from two full hydraulic cylinders, one for vertical and one for horizontal movement. The lateral movement is supplied by an unusual flexible channel ramp construction. The illustration shows the equipment

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Material Handling
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Less Time

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Handling wet or dry, hot or cold, bulky materials quickly and easily, the ROURA is simple to operate—only one man is required for distributing and unloading—and he does this in much less time than ordinarily required under old-fashioned manual methods. Thousands of Roura Hoppers (which fit any standard fork or platform lift truck) are in constant daily operation, serving and saving for such firms as Owens-Illinois Glass, Corning Glass, National Fireproofing, General Motors, Ford, Chrysler, American Brake Shoe, General Electric, Westinghouse, Western Electric, American Steel Foundries, International Harvester, John Deere, etc.

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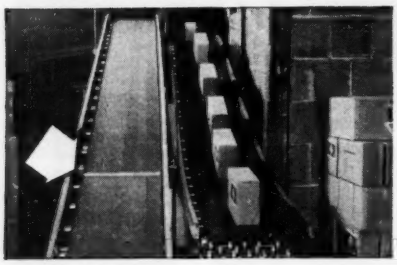
ALLIGATOR®

CONVEYOR BELT LACING



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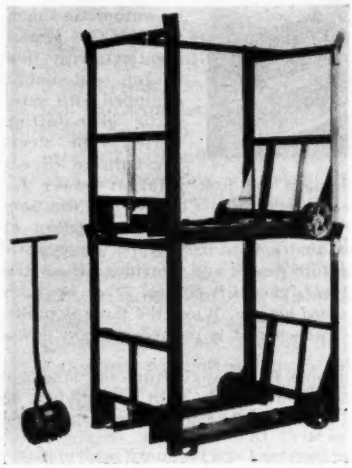
extended horizontally and at the extreme top of vertical rise, being operated by manual lever control mounted on the pump, in complete view of board. A solenoid operated push-button control can also be furnished, concealing the pump under the board.

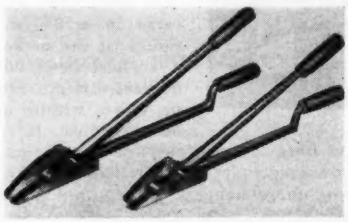
Circle No. 99 on Reader Service Card for more information

STACKING TYPE WIRE COIL TRUCK—The All Steel Welded Truck Co. has introduced a stacking type wire coil truck, developed for wire and screw products manufacturers, and other users and handlers of wire coils. Among the features of this wire coil truck is the individual truck flexibility, when used with the Clark Lift Jack System. Manual handling of coils is reduced to two handlings per coil from car to machine, according to the manufacturer. The use of this truck makes it possible to stack heavy wire coils, by means of a fork truck, three or four tiers high, thus saving great areas of floor space.



Circle No. 100 on Reader Service Card for more information

HEAVY-DUTY STEEL STRAPPING CUTTER has been introduced by A. J. Gerrard & Co. It is designed for use in steel mills, steel warehouses, railroad freight terminals, cotton warehouses, lumber mills, paper jobbers, etc. It is said to be especially effective on such hard-to-reach places as freight car bulkheads and car walls. The tapered lower jaw is inserted under the tightest strap. The offset handle affords easy grip with the tool lying flat against a surface. Only slight pressure on the top handle is required for cutting heavy-duty strap. Cutters are available in two models: one for 2" strapping and the other for ¾" to 1¼" steel strapping.



Circle No. 101 on Reader Service Card for more information

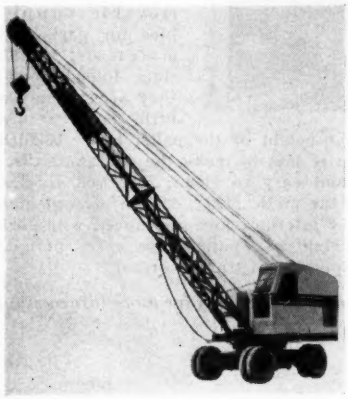
INDUSTRIAL WHEELS—Aerol Co., Inc., has developed a tread material for its industrial wheels named "Resitred."

This new line includes all the features of the aluminum alloy Aerol wheels plus the increased rollability, quietness and greater load capacity of Resitred. The tread, composed of macerated canvas duck material impregnated with phenolic resin, is formed under pressure in precision molds to insure concentricity and balance. It is resistant to all common fats, acids and greases, and is practically indestructible.

It is further claimed that since it is permanently bonded to the aluminum alloy hub, this tread will withstand unusually high loads. An added feature is the spark-proof quality.

Circle No. 102 on Reader Service Card for more information

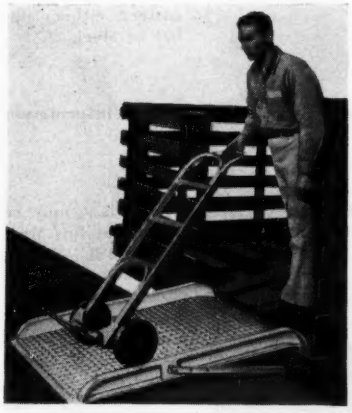
10-TON MOBILE CRANE—The new heavy-duty Wayne Crane Model 20 is particularly designed for industrial yard lifting and materials handling operations. Manufactured by the Wayne Crane Div., it has a lifting capacity of six tons at a 10 ft. radius with standard counterweight, and 10 tons with outriggers extended and auxiliary counterweight. The model will accommodate up to a 39-in. magnet or ½-yd. clamshell and dragline buckets in addition to the lifting crane operation. A single engine, gasoline or diesel, supplies motive and operating power.



The Model 20 travels, lifts, booms and swings simultaneously or independently. Four-point "walking" beam suspension provides equal stability while lifting or digging even on rough terrain. Full 360° operation, 7'8" wheelbase and short turning radius facilitate operations in "tight" spots. Mounted on four sets of dual pneumatic tires, the crane travels at speeds up to 15 m.p.h.

Circle No. 103 on Reader Service Card for more information

MAGNESIUM DOCK BOARDS—Magline, Inc. has announced a new, standard line of magnesium dock boards. Designed specifically for use with truck docks, the lightweight boards eliminate the necessity of a dock board of special design in many loading applications. It has a fully adjustable automatic drop lock which drops down against the dock and locks the board securely in position to prevent slippage. The truck may back up within three inches of the dock. It is further stated that in instances where the truck bed is lower than dock level, the dock board can be reversed by turning. The boards are crowned to compensate for height differences. The boards will be produced in two rated load capacities; Series M1, rated to carry 1000 lb. per axle, and Series M2, rated at 2000 lb. per axle. Many stock sizes are available in each series.



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PALLET RACKS

Enable You To Use Your "Air Rights" For Maximum Cubage Without Tieing Up Low Level Loads

Easy assembly and knock-down features for meeting changing warehouse conditions.

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Strong welded construction capable of carrying heavy pallet loads.

Several standard designs available to suit any application. WRITE FOR CATALOG

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Now CONVEY CONTINUOUSLY
INTO OR OUT OF
PRESSURE or VACUUM ZONES
WITHOUT PULSATION

HANDLE ANY *FLOWABLE* MATERIAL

This photo shows the testing set-up prior to shipping an installation of a Hapman circular flight chain conveyor equipped with Hapman Pneumatrols. The pressure-sealed Pneumatrols used with the Hapman pressure-tight, chain-link and flight assemblies, make it possible to convey any *flowable* material into or out of vacuum and pressure zones intermittently, continuously or it can be processed in motion through these zones. Complete information on request.

A. Motor and drive. B. Speed reducer. C. Dotted lines indicate position of pressurized hopper in actual installation. D. Tanks supplied air source for actuating Pneumatrols in test set-up. E. Receiving hopper. F. Standard take-up for Hapman chain conveyor.

HAPMAN CONVEYORS Div. HAPMAN-DUTTON COMPANY
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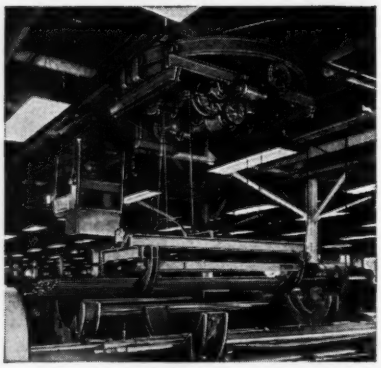

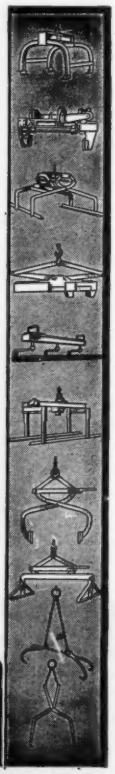

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COMPLETE YOUR CRANES WITH

MANSAVER GRABS

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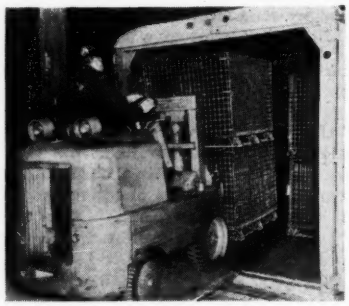
Circle No. 137 on Reader Service Card for more information

FOLDING WIRE MESH CONTAINER—Designed and constructed to carry loads up to 4000 lb. are these Palletainers, made of welded steel wire with steel pallet base and legs for fork truck handling. They are offered by Union Steel Products Co., and are used as shipping containers, for storage and as movable supply bins for parts and materials. With sides folded down, they occupy only a little more return shipping space than the height of the pallet base. Welded steel wire construction is said to make the containers fireproof, rust-resistant and easy to clean; dirt and foreign matter drops through the mesh. They can be stacked high in storage because they interlock and are moved with fork or lift truck. Their eight-way pallet base entry permits maneuverability in shipping and storage areas.

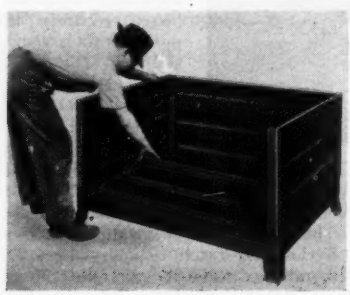


Circle No. 105 on Reader Service Card for more information

SHELF TRUCK—Bay Metal Products is producing a standard shelf truck that is designed for use in factory, service station, and tool room operations for the movement of stock or tools. Trucks are 36½" high; shelves are made of 14 gauge steel with a 2" flange, legs of 1¼" x 1¼" x ⅛" angle iron. Bottom shelf is fixed with flange turned up, others are reversible. Trucks are equipped with two 5" rigid casters, and two 5" swivel casters, either rubber or steel.

Circle No. 106 on Reader Service Card for more information

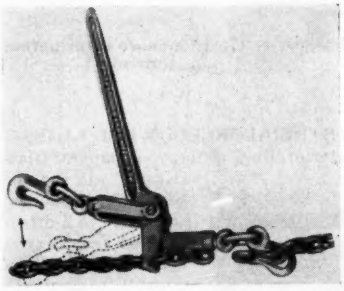
COLLAPSIBLE BOXES of 2000 lb. capacity which may be erected in less than 20 seconds, are offered by Phillips Mine and Mill Supply Co. Designed for storing and transporting bulk materials and parts, the Model B-20 "Phil-Box" folds down to a height of only 9-1/16" with a level top surface. In the erected position the unit stands 28⅛" high, with a 49" x 37" x 24" box interior. Construction is such that a fork lift truck or pallet truck may enter from all four sides.



Each side is held in the upright position by a latch with a safety catch. Since there are no loose parts or pins, one man can erect it in less than 20 seconds. Made of heavy gauge steel with a box corrugation design for maximum rigidity at minimum weight, the box is of all-welded construction, with smooth, rolled edges as a safety feature.

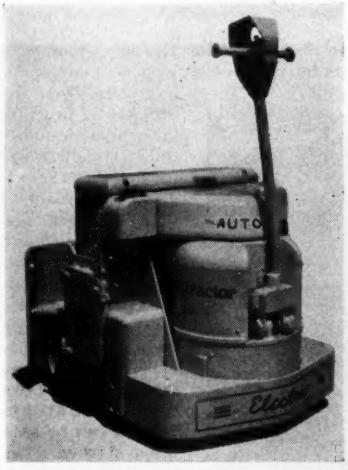
Circle No. 107 on Reader Service Card for more information

LOAD BINDER—According to Canton Cast Products, each operation of the handle of this load binder takes up slack and tightens until desired tension is reached. Compound leverage action enables one man to exert up to 4500 lb. of tension-pull on the chain without the use of an extension pipe, chain fall or similar equipment. It is further stated that the continuous action feature makes it a versatile tool in steel and machinery handling or hauling, lumbering, logging, in oil fields material handling and in rigging. Its use extends to such jobs as the moving of heavy objects, opening box car doors, fence stretching and other "take-up" operations. Listed as other features are the clevis design, extra heavy alloy construction and drop forged hooks with 360° swivel action. The device is now made in six sizes from 3000 lb. capacity for light commercial use up to 30,000 lb. capacity.



Circle No. 108 on Reader Service Card for more information

DRIVER-LED ELECTRIC TRACTOR, the Transtractor '101', almost half a ft. shorter than previous models, has been announced by the Automatic Transportation Co. Redesign of the power unit housing, which is now cylindrical instead of rectangular, has cut 5½ ins. from the model's length. This lowers aisle requirements and reduces the turning radius, according to the release. Ruggedness is built in through use of a completely cast drive housing for the first time, together with a cast collector ring cover bolted to the frame for solidity. The same substantial protection has been provided for the battery, now guarded by a solid steel enclosure. The tractor operates in either forward or reverse with the handle upright, saving additional space in close quarters.



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Many Features
Greater Economy

MILSCO Commander

The Milsco seats illustrated are typical of the standard Milsco line for various types of mobile equipment. New features combine extra comfort and serviceability. Sturdy metal frames; Foam Rubber padding with a choice of durable covering materials; easy installation.

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If your equipment requires special seating, our Engineering Department will gladly work with you. Put our years of specialized seating experience to work . . . without obligation.

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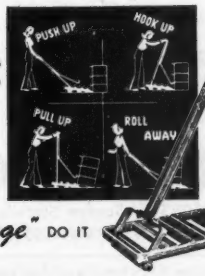
*With apologies to you know who



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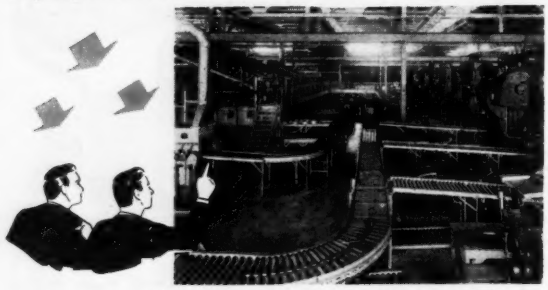
What should you expect of Conveying Equipment?



● Conveyers and conveyer systems should be designed to meet specific problems. A purchaser has every right to expect that the conveying equipment he buys is the type that will best meet his requirements. He just can't afford trial and error methods. That's why more and more people are giving their conveying problems to Mathews Engineers, and are getting just what they should expect—a system of quality equipment, engineered to meet their specific requirements.

Whether the loads are heavy or light—whether you need two sections or a complete system of equipment—your Mathews Engineer is eager to help you to get just what you need and to give you the service you should expect.

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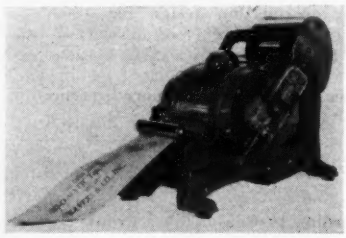
MEMPHIS 11, TENNESSEE

Circle No. 141 on Reader Service Card for more information

GUMMED TAPE PRINTER, developed by Travers & Co., prints gummed tape as it is used. The unit, which fits any ordinary tape shooter, is easily attached by removing two screws from the shooter and placing the Ad-O-Matic in position. A message, eight ins. in length, that will not smear nor blot and is waterproof, can be printed on tape 1″ to 4″ wide. Printing may be in one of six colors. The manufacturer's release also states that the copy may be changed readily.



Circle No. 110 on Reader Service Card for more information

WATERPROOF PAPER REINFORCED WITH GLASS—A strong, tough, non-deteriorating, waterproof paper, "Glas-Kraft," will soon be available for general use. All-directional reinforcement comes from continuous glass fibers swirled between two piles of kraft and then bonded under heat and pressure in a special waterproof, all-weather laminant. There are three standard grades available in rolls or sheets up to 96 ins. in width. In general industry, the paper is used for wrapping, packaging, shipping, and storing steels, wire stock, cement, chemicals, furniture, motors, textiles, papers, vehicles, machinery, boats and building supplies. It makes fine temporary tarpaulins, case liners, car liners and shrouds for export and domestic shipping. It is also used for unitized loading of freight cars and trailers.

Circle No. 111 on Reader Service Card for more information

TOTE BOXES—United States Rubber Co. has announced stacking and nesting tote boxes that are formed in one seamless piece from the company's Royalite thermoplastic material. Handles are formed into the roll of the upper lip so that the tote box can be picked up from any side. All corners are rounded. The tote boxes are designed for criss-cross stacking, with adequate locking when boxes are stacked. Contents of each can be seen when stacked. The boxes take up little space, are very light weight, easy to handle and easy to clean. They are extremely tough, with high resistance to impact. It is further claimed that they

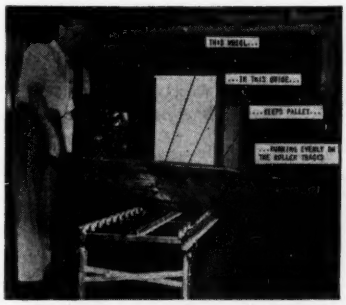
are also acid-resistant, non-toxic and have a low water absorption, less than one-half of one percent.

Circle No. 112 on Reader Service Card for more information

ELECTRIC HOIST—The Shaw-Box Crane & Hoist Division of Manning, Maxwell & Moore, Inc., has announced a one-ton capacity Load Lifter electric hoist in which are incorporated many operating construction details. Among its features are compactness and accessibility for easy servicing (without taking it down from its overhead support or track). It is controlled by push buttons, with only 24 volts at the push buttons for additional safety. Main frame is steel and housings and covers are aluminum alloy. The motor brake is of the multiple disc type with the friction discs operating in oil. Motor mounting will receive any standard make of motor with a NEMA flange mounting. The hoist is available for lug suspension, standard push geared type and motor driven trolleys, and for all standard electric currents.

Circle No. 113 on Reader Service Card for more information

PALLET CONVEYOR—A conveyor for use in industries having assembly, fabrication, processing, or finishing operations, has been developed by The Rapids-Standard Co., Inc. Called Guided Pallet Conveyor, this equipment is especially designed for handling mixed goods requiring varied processing periods. Power units and gravity sections that bolt together allow plant workers to install and rearrange the system to fit production needs. Palletized materials remain on the line throughout the production cycle, with flow to each work station regulated by individual worker. Power units index pallets forward and elevate materials to connected gravity sections, combining power with free flow from storage on the line. At work stations palletized goods may be raised, lowered, or rotated to most convenient working position. Hinged sections in the line permit areas inside the loops of the conveyor to be used for storage or work space.



Circle No. 114 on Reader Service Card for more information

Circle No. 142 on Reader Service Card for more information

"On-time" maintenance prevents breakdowns... keeps up efficiency

HOBBS Engine Hour METERS

remove maintenance guesswork

Powered equipment in the repair shop represents a drain on efficiency. You can prevent much of it by knowing when to change oil, lubricate, inspect, overhaul, etc.

The HOBBS Meter tells you when. A precision-built electrical timing instrument, it tells at a glance accumulated engine operating hours. It's accurate and built for rough usage. Fully guaranteed . . . low in price. WRITE FOR FULL DETAILS.

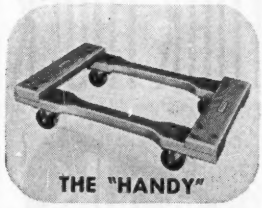
ORIGINATED AND MANUFACTURED EXCLUSIVELY BY

John W. Hobbs Corporation

2061 YALE BLVD. SPRINGFIELD, ILLINOIS

DOLLIES, SKIDS, TRUCKS

Built to meet all tough requirements



THE "HANDY"

● **IRONBOUND DOLLIES**

The "Handy", one of a full line of dollies, has shaped frame for comfortable hand grip. Equipped with four swivel casters. 3" dia. wheels—choice of steel or rubber.

BARREL SKIDS

Selected hardwood rails reinforced entire length with flat steel bars. Standard models are 16" wide; 8' to 16' long.

Ironbound engineers will help you with your handling problems. We design and build super structures to handle special products at lower handling costs.

● The RolTruk will "pick-up and go" with paper rolls, drums, barrels, etc. Available in several models with capacities ranging from 500 to 2000 lbs. Ask for illustrated bulletin 10RT.

Standard line of Ironbound Skids, Semi-Live Skids, Dollies and Floor Trucks is fully illustrated in Catalog GP-7. Write for a copy, today.

IRONBOUND

BOX & LUMBER COMPANY

Materials Handling Division

30 HOFFMAN PLACE • HILLSIDE, N. J.

SKIDS • SEMI-LIVE SKIDS • DOLLIES • FLOOR TRUCKS

Circle No. 143 on Reader Service Card for more information

Circle No. 144 on Reader Service Card for more information

Handling Costs Getting You Down?

LET SPEEDWAYS *GRAVITY* CONVEYORS CARRY *YOUR LOAD*

Here's the modern, efficient way to reduce material handling costs. Set up a line of Speedways Conveyors—and speed up movement, save back-breaking, inefficient, costly "man handling."

Speedways light duty Wheel Conveyors and SpeedTUBE Roller Conveyors—available in 12", 15", and 18" standard widths—can handle 90% of all cases, boxes, packages. 5' and 10' lengths!

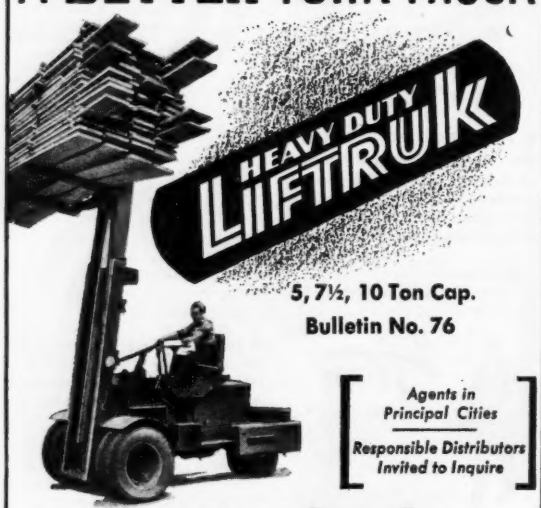
Write for literature that gives constructional details, tells about Speedways "Hi-Lo" feature that gives "Double Duty," shows simple hook up (without tools) and easy portability.

KEEP 'EM ROLLING WITH SPEEDWAYS CONVEYORS, INC.

1242 Niagara St.
Buffalo 13, N. Y.

Represented and carried in stock by experienced material handling equipment engineers in principal cities. Also manufactured in Canada.

A BETTER FORK TRUCK



5, 7½, 10 Ton Cap.
Bulletin No. 76

Agents in Principal Cities

Responsible Distributors Invited to Inquire

Made by Mfrs. of KRANE KAR

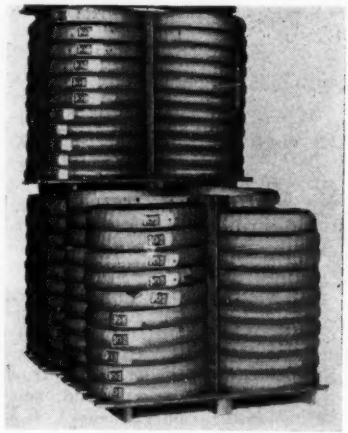
The Pioneer Manufacturers of HEAVY DUTY Industrial Materials Handling Equipment

SILENT HOIST & CRANE CO.

888 63rd STREET, BROOKLYN 20, N. Y.

Circle No. 145 on Reader Service Card for more information

PLYWOOD PALLET SPACER—It is designed for handling and storing tires, batteries, twine, wire, collapsible cartons, and similar materials subject to damage or compression by weight. The Pallet Spacer is manufactured by the Hamerslag Equipment Co. When stacking materials, the weight of the articles is held by the plywood spacer. When not in use, the interlocked plywood panels can be disengaged and laid flat onto the pallet, so that only a minimum of storage space is used.

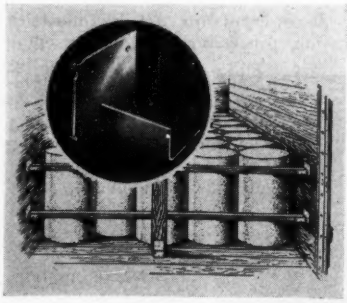


Circle No. 115 on Reader Service Card for more information

BOX OPENER—Flash Box Opener Co., Inc. has announced a new model. It is designed to protect contents of cartons because it may be adjusted to penetrate exactly under the outer cover thickness. It cuts cleanly, permitting reuse, and is designed for heavy duty.

Circle No. 116 on Reader Service Card for more information

SPUR CLEAT—National Dunnage Co. has developed a freight cleat for holding gates and crossbar members to reduce freight loss and damage in transit. It is manufactured in sizes for use with 2"x4", 2"x6", 4"x4" and heavier or lighter dimension members. In addition to holding gates and crossbar members to secure loads of refrigerators, washing machines, packing cases, etc., the cleat lends itself for hold-downs over barrels, crates and top-heavy machinery. It is also adapted for multiple loads and stop-off cars. This feature is designed for shippers of package freight in car loads.



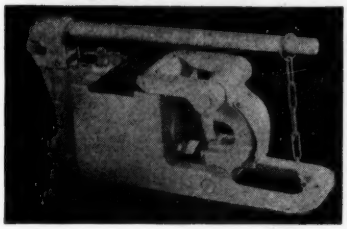
Circle No. 117 on Reader Service Card for more information

CONVEYOR ON TRUCK CHASSIS—George Haiss Mfg. Co., Inc., has introduced a heavy-duty trough belt "piling" conveyor for mounting on customer's truck chassis. It may be used for piling coal, sand, gravel and similar aggregates. It swings through an 180-degree arc and piles to any de-

sired height. Lengths of conveyor are available up to 60 ft.; with 24", 30" or 36" width belt.

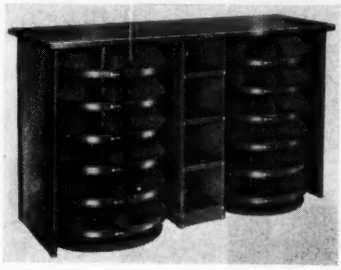
Circle No. 118 on Reader Service Card for more information

WIRE ROPE CUTTER—Announcement of a new "Model W" to its line of Hydrashear Wire Rope Cutters has been made by the Pell Cable Cutter Co. This model has been designed especially for use with cable-controlled equipment, for elevator repair work or wherever a small, portable lightweight cutter is required. It weighs 18 lb., and is designed to cut any type and size of wire rope up to and including ¾" diameter. It is only 12" long, 3½" wide and 6" high.



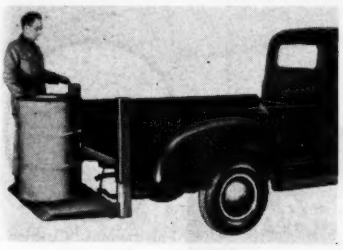
Circle No. 119 on Reader Service Card for more information

ROTARY BINS—Designed to increase storage space under counters, the Frick-Gallagher Mfg. Co.'s Rotabin Counter provides aisle access to 72 large compartments in twelve 28" diameter independently rotating trays. In addition, four stationary spaces are available for large items. Built of steel, the counter is strong and rugged; the top is formed from a single heavy-gauge sheet. Center shelf section is bolted in place while each two units are supported on a heavy gauge formed base. Overall dimensions are 6' 3¼" long x 27" deep x 41⅝" high.



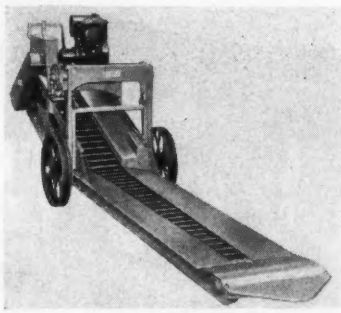
Circle No. 120 on Reader Service Card for more information

HYDRAULIC TAILGATE LOADER for pickup trucks, the Lift-O-Matic, has been developed by the National Lift Co. It is installed on most pickup trucks and has a lifting capacity of 1000 lb. The hydraulic power is provided by a fan-belt driven hydraulic pump with its own self-contained clutch. The pump operates only when lifting power is needed. The operator can operate the unit while riding up or down with the load. When it is not being used to load or unload the truck, it can be level-locked at the truck body floor level, or it can be swung up and securely locked, acting as a regular tailgate. A safety by-pass valve in the hydraulic pump prevents overloading.



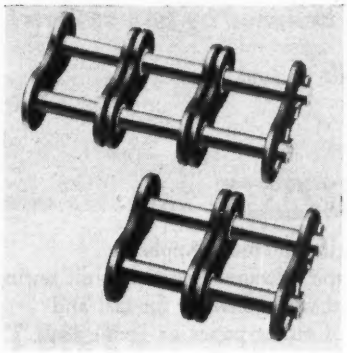
Circle No. 121 on Reader Service Card for more information

UNDER-CAR UNLOADER—George Haiss Mfg. Co., Inc., has introduced a combination belt and positive chain drive Hopper Bottom Car Unloader for handling sand, gravel, crushed stone and any material loaded in hopper bottom cars. Capacity of the machine is up to three tons per minute. The handy card bound into this issue is designed to bring you additional information promptly.



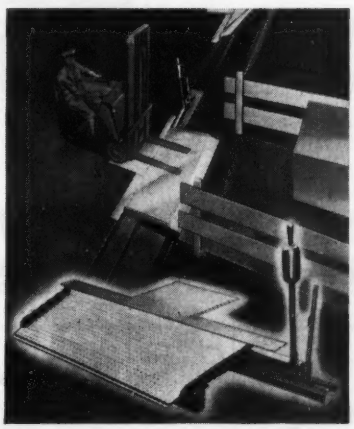
Circle No. 122 on Reader Service Card for more information

CONNECTING LINKS FOR ROLLER CHAINS—A bushed center plate connecting link has been developed for use with Diamond multiple-strand roller chain by Diamond Chain Company, Inc. The connectors which are being produced for ¾" through 2½" pitch multiple-strand roller chains, have file-hard bushings pressed into pitch holes of pairs of center plates, making one unit with the bushings then ground for hole and pitch accuracy. Since full support is provided across all strands and both pins and bushings are hardened and polished, wear is said to be greatly reduced.



Circle No. 123 on Reader Service Card for more information

ADJUSTABLE RITE-HITE LOADING DOCK has been developed by The Associated Handling Equipment Co. A 12" lateral movement centers the dock to the carrier. Vertical movement adjusts the dock board to the height of over 90 per cent of all carriers (42-54 in.) and provides a non-skid ramp accessible to fork trucks, two-wheel vehicles, and lift jacks. Cantilever action with counterweight, located beneath the unit, raises and lowers the dock board. The dock board remains in an upright position and the hinged handle folds in when not in use. Over-all dimensions are



(Turn to page 90)

A MAKER OF MULTIWALL BAGS

knows how

TO DESIGN AND SERVICE BAG PACKING MACHINES

- *High Speed Closing—up to 15 per minute!*
- *Trouble-free—designed by bag experts!*
- *Long Life—built to last!*

FOR PACKAGING

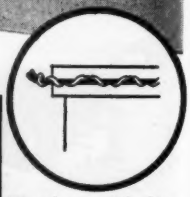
Fertilizers
Chemicals
Feeds
Salt
Charcoal
Insecticides
Food Products
Rock Wool
Citrus by-products

NEW ET BAGPAKER

Semi-automatic—self-contained. Applies a sewn-thru "Dry Tape" closure. Precision-built sewing head is synchronized with conveyor for fast and fool-proof closing of either paper or textile bags. Foot-pedal provides convenient control of both sewing head and conveyor. Easy on the operator. Permits *more* production per day. Portable, heavy duty, built for hard continuous usage. FT Bagpaker, without conveyor, available for use with existing conveyor systems.

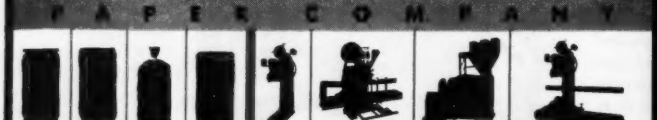
write for booklet today

For full information, ask for booklet 220L entitled: "Quick Facts on Bagpak Machinery and Bagpak Multiwall Bags."



This famous "Cushion Stitch" absorbs strains, won't pull out, yet provides an easy-to-open closure.

INTERNATIONAL PAPER COMPANY



BAGPAK DIVISION
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IN CANADA: Continental Paper Products, Ltd., Montreal, Ottawa.

Circle No. 146 on Reader Service Card for more information

PACKAGING MECHANICS SECTION

A regular monthly section in which are presented solutions to the problems of efficient filling and handling the boxes, cartons, bags, bottles, cases, etc., used in commerce and industry.

CONTENTS

SOLUTION OF HANDICAP IN RECEIVING (of packaging materials). This leading silversmith company's receiving department was not adequate for today's oversize highway trucks. Read how an opening through a wall and a hoist-suspended conveyor section overcame a dual problem in this receiving operation..... 82

GRAVITY CONVEYORS DELIVER THE PACKAGED GOODS. A combination of gravity conveyors and drop doors (silenced with rubber-and-leather padding) delivers packaging production from case sealing on one floor to the palletizing station on the lower floor. Features are minimum use of floor space and small investment in equipment..... 86

OLD PLANTS... EFFECTIVE HANDLING

Many plants can use this . . .

Solution Of Handicap In Receiving

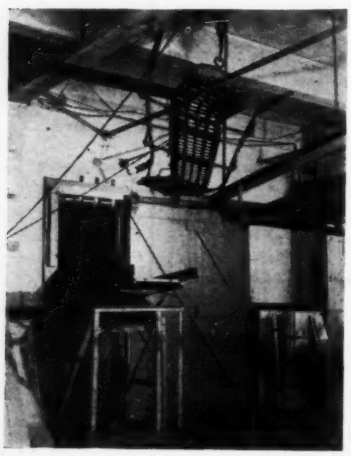
(of packaging materials)

By W. D. ACKLEY,
Industrial Engineer
Oneida, Ltd., Oneida, N. Y.

This receiving room for packaging materials was too small to accommodate today's large delivery trucks. Solution: an opening in the outside wall and an overhead gravity wheel conveyor. A hoist-suspended gate section in the line was also a key factor in the conversion project.

AVAILABILITY and accessibility of varied packaging materials is a must in such an operation as ours where the "package" is counted on to display the silverware to best advantage. Our particular set-up was designed to overcome certain problems of layout (on two floor levels). The solutions may have points of interest for other engineers in charge of packaging and material flow functions.

HOIST-SUSPENDED section is drawbridge that opens up far side of the room.



Handling Equipment Solves Receiving Problem

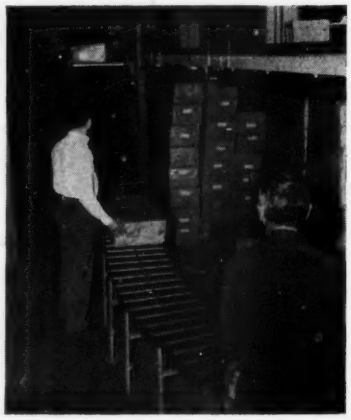
Our storeroom for chests and paperboard cartons is located on the second floor of our packing-shipping building, while the unloading from delivery trucks is done at ground level. Ordinarily it would be a simple matter to have the highway vehicle drive up to the booster belt that delivers these packaging materials to the upper floor. But the doorway of this receiving room is not large enough to accommodate today's oversize highway vehicles. To carry the cartoned goods across the floor would be too costly, and would block the entrance to the smaller vehicles that normally drive into the room.

To overcome this drawback, we broke an opening through the outer wall of this building, about eight ft. above ground level, to accommodate the "receiving" point of a gravity wheel conveyor. This is now the unloading point for the larger highway vehicles delivering chests and boxes.

The cartons are conveyed from outside through the length of the receiving room and are delivered to the booster belt that connects to the distribution conveyor on the upper floor. But within the receiving room another situation had to be remedied.

A permanently installed overhead gravity conveyor would have cut off a storage area to one side of the room—at least, it would have made this part difficult of access

TAKE-OFF DEVICE for incoming chests.



STENCIL MARKING

Delivers The Goods!

Three size machines . . . cut ½", ¾", 1" stencils.

MODEL N CUTS ½" STENCILS
$169
MODEL S CUTS ¾"..... $169.00
MODEL R CUTS 1"..... $180.00
F.O.B. Belleville, Illinois. Freight added when delivered from dealer's stock.

Yes . . . your goods reach home to the customer, faster, safer. Stencil marked addresses are neat, legible, permanent . . . correctly read by hurried freight handlers. Stencil marking is easy . . . lay a cut stencil on the shipment, a few brush strokes, and its ADDRESSED. No other method of addressing gives you ALL these advantages.

No other stencil machine gives you the Word Space Button, Hardened Dies and Quick Replaceable Punches, Streamlined Hood, Sealed-In Lubrication, and other superior features.

Your orders shipped immediately from dealer's stock in principal cities. Or write for free Handbook.

MARSH K-1 BLACK STENCIL INK

No shaking needed. Blacker marks. Weatherproof. Fast drying. Write for FREE pint sample and try it.

MARSH FOUNTAIN BRUSH

"Push Button" fingertip control assures neat, attractive marking on your shipments.

MARSH OIL BOARD

Cuts clean, perfect stencils. Stencils last for 3000 markings.

MARSH STENCIL MACHINE COMPANY, 25 MARSH BLDG., BELLEVILLE, ILL., U.S.A.

Circle No. 147 on Reader Service Card for more information

for normal operations. For that reason we incorporated a hoist-suspended gate section in this line, 10 ft. long, which is only lowered into place when cartoned packaging materials are routed upstairs. A photo shows how this section, a curve, is hoisted out of the way to give access to the area on the other side of it.

Routing Materials Into the Bays

On the second floor, a conveyor belt 180 ft. long extends above the main aisle. It delivers all incoming chests and paperboard boxes to the various destinations in the long room. This is accomplished by means of a take-off device which is shown in one of the photos.

It is a portable chute, mounted on an angle iron structure which is supported on casters. A deflector arm at the top is designed to extend at any desirable point across the overhead belt conveyor. Floor locks anchor the chute at any working area. In this manner incoming packaging materials are discharged to bays on both sides of the main aisle.

However, in view of the depth of the bays this arrangement could entail considerable walking if the cases of materials had to be carried to stockpiles that may be started some 20 feet away along a wall. This is forestalled by two 10 ft. sections of collapsible gravity roller conveyor, which are attached to the take-off chute. These conveyors, with scissors type side rails, can be arranged in S-curves or other suitable forms for routing the arriving cases close to the storage point.

Delivering to Packing, Shipping

Other materials required in packaging—labels and guarantees—are stored on steel shelving which is adjacent to a chute leading to the packaging floor below. The departments on both floors are connected by a two-way communication system. When the packaging department calls up for a given number of labels and guarantees for Community Plate or the Evening Star pattern, to choose examples at random, the materials are collected on a small castered truck and dispatched promptly to the point of use via the chute.

Small amounts of packaging materials are likewise dispatched in this manner. (The paperboard cartons for sets of six teaspoons or the same number of salad forks are rather small, it should be remembered.)

The inspection stands for the incoming chests (made of wood and plastic materials) are moved from bay to bay. Inspection is done at once, and the necessary printed leaflets are placed in the containers at the same time. The chests are usually replaced in the original containers, and are thus ready for immediate delivery when called for by the shipping room on the floor below.

The silverware, it should be explained, is not shipped in the chests but in the small paperboard cartons, wrapped in tarnish-resisting paper. The chests are shipped separately, and are sent down via another chute at the north end of the room. The silverware items are assembled in the chests by the retail dealers.

Thus the facilities for distributing chests, paperboard boxes and accessory materials have been as carefully planned as those for receiving them. Labels and guarantees arrive at packaging within minutes after they have been called for over the communication system. Immediate inspection and preparation of chests is designed to keep a supply on hand to fill the orders of the shipping department —also within minutes after requested.

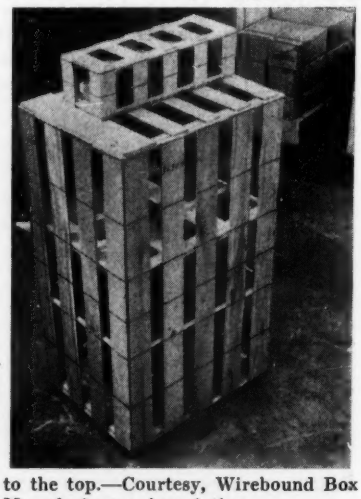
The conveyor-chute method has given us the necessary flow between floor levels, besides overcoming a situation that would have been a serious handicap in receiving.

SPOT SOLUTIONS TO PACKAGING PROBLEMS

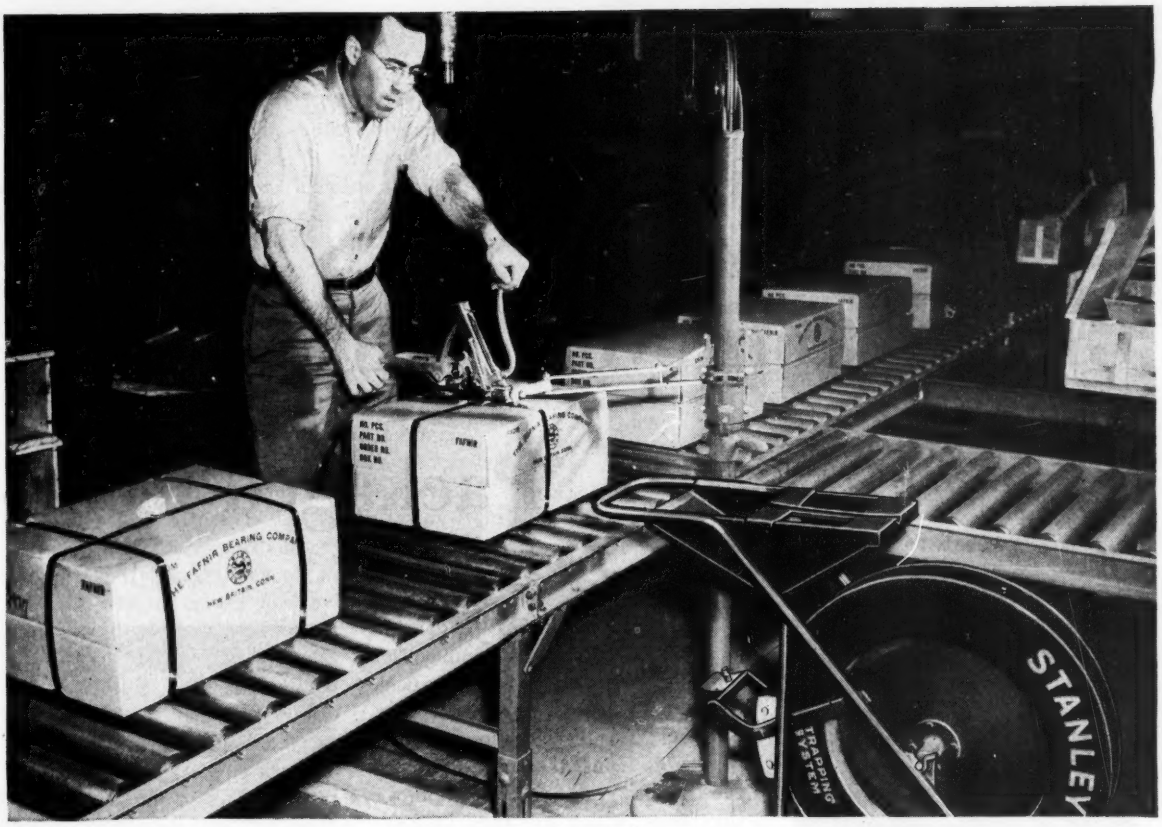
GUINEA PIG WITH WIRES—To determine scientifically exact handling received by long haul air cargo, Pan American World Airways is flying this

shipment over its regular routes around the world. It includes a standard 63-lb. electric addressing device, plus a 10¼-lb. Impacto-graph. The latter equipment records on tape all impacts sustained by the crate in transit, as well as all movements of the crate in vertical, longitudinal or lateral directions over the 22,000-mile route.

A CRATE WITH A HOOD—Here is how a 20-in band saw weighing 650 lb. and standing nearly eight ft. is packed in a wirebound crate that includes an added wirebound hood to enclose the top of the saw. By adding a hood, the Crescent Machine Division of Rockwell Mfg. Co., Leetonia, Ohio, has eliminated the freight penalties amounting to as much as $8.00 per saw shipped to the west coast when the top of the saw was uncrated. In this package, the tall saw is packed in the main container with the top of the saw protuding about a foot through the top of the crate. The hood, assembled separately, is nailed

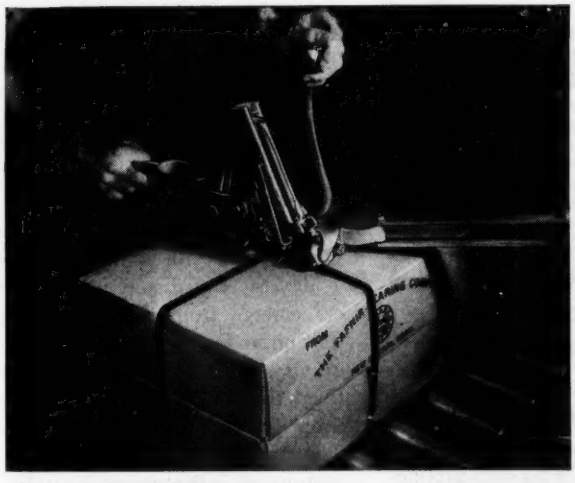


to the top.—Courtesy, Wirebound Box Manufacturers Association.



"Packaging costs cut up to 25% with Stanley Steel Strapping"

— Says The Fafnir Bearing Co.



Up to 25% saving on packaging cost—that's the record Stanley Steel Strapping System has made at The Fafnir Bearing Co. And it's typical of the way Steel Strapping can shave dollars and cents from packaging costs of almost any product.

Stanley Steel Strapping is quick and easy to apply —saves man-hours and materials—gives greater protection to goods in transit. System includes tools, reels and accessories—everything you need for *your* application. Write for full details or demonstration now! The Stanley Works, Steel Strapping Div., 203 Lake St., New Britain, Connecticut.

STEEL STRAPPING AND CAR BANDING SYSTEMS

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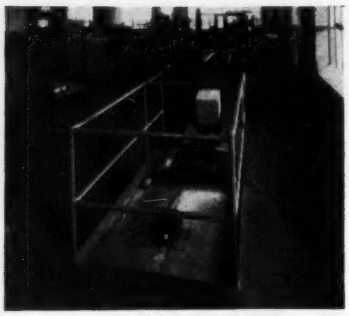
Circle No. 148 on Reader Service Card for more information

OLD PLANTS... EFFECTIVE HANDLING

Gravity Conveyors Deliver The Packaged Goods



SEALED PACKAGE is here shown advancing on gravity conveyor toward first drop door on upper floor level.

Within the recent past, American Greeting Publishers, Inc., Cleveland, had to cope with a problem in its quarter-century-old building that is apt to be encountered by other companies in the course of relocating departments: the effective disposal of packaged materials from a third-floor packing department to a second-floor warehouse area directly beneath.

THE company is the world's largest manufacturer of greeting cards in terms of units sold. Only one elevator was available for the heavy traffic; a second elevator could not be used because two sections of the building have two different floor levels. A ramp was practical only for limited use. This was due partly to the large volume and partly because the distance between the two elevators was approximately 200 ft.

Three packing lines produce 24,000 boxes (each containing 16 sets of cards and envelopes) per eight-hour day. These make up 2000 shipping containers. The packaging consists of assembling the (holiday) card assortment into the boxes, which are then loaded into the shipping containers.

The packaging operation which is located in the south end of the third floor had previously been on the fifth floor. This change was made since all holiday cards are stored on the third floor before packaging.

These factors made the flow problem:

1. **Heavy inter-floor material flow.**
2. **Packing department and warehouse area are on separate floors, in the same relative position.**
3. **Existing inter-floor carriers could not accommodate more traffic, even limited production.**

Simple Solution Is Most Effective

A major complicating factor was that the use of the overtaxed elevator, besides interfering with production, also involved excess handling.

THIS OVERHEAD GRAVITY conveyor takes package to second drop door (left), whence goods roll to pallet station, right.

Company engineers studied means of routing the volume of packaged holiday cards down to the second floor without use of the elevator (so that it would be available for normal inter-floor traffic). The criterion was that such an installation had to do the job at the lowest cost (commensurate with the performance desired) and with the use of the least amount of floor space.

The solution:—a combination of gravity conveyors and drop doors. Today the sealed shipping containers emerge from the compression unit on an inclined 10 ft. section of gravity wheel conveyor, which delivers to the 2′ x 3′ counterweighted drop door that was installed here. The counterweight is adjustable to cartons of different sizes; and an

(Turn to page 96)

WALKIES AND CONVEYORS HALVE UNLOADING TIME . . .

(Continued from page 30)

ting covers when the conveyor was not in use.

As one of the photos shows, the conveyor terminates at the door of the rail car. This meant that henceforth the operators' walking was confined within the cars, and their energy was conserved because they no longer had to wheel the heavy boxes across the platform. The boxes were simply tipped at the car door onto the gravity roller conveyor. The latter carried the containers 30 ft. inside the plant to a new palletizing station.

Specific advantages were as follows:

1. Comparative figures revealed that the new method cut the unloading time in half, which was largely the result of the elimination of excess walking.

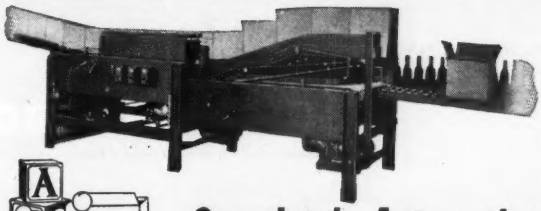
2. The relocated palletizing station (away from the platform) was more satisfactory from the viewpoint of accessibility and sufficient work area.

3. The use of covers for the "sunken" conveyor line did not interfere with normal operations; it gave full use of the platform for traffic when no unloading was in progress.

In our case, the elimination of truck waiting time and the decrease in rail car unloading time gives convincing proof that older buildings can be converted profitably to modern methods.

Circle No. 149 on Reader Service Card for more information

ELIMINATE HAND LABOR !



Completely Automatic Unloading and Unscrambling of Bottles, Wide-mouth Glass Jars and Cans . . .

Costly hand labor is eliminated! Beer cans, baby food jars, all types of jars and cans are unpacked and unscrambled speedily, inexpensively with the A-B-C Automatic Unloader and Unscrambler.

ONLY THE A-B-C UNLOADER AND UNSCRAMBLER IS COMPLETELY AUTOMATIC

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Better production-proven machines for faster, lower cost packaging. (Case Sealers, Short Case Sealers, Side Sealers, Hand Gluers, Seal-All)

A-B-C PACKAGING MACHINE CORP.
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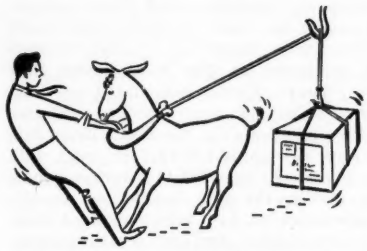

You wouldn't try this...

but is your materials handling old-fashioned?

Nine out of ten companies with up-to-date manufacturing techniques still find dollars slipping away through old-fashioned materials handling.

More and more alert company officers, plant foremen and supervisors are searching for more efficient materials handling as a way to increased profits. Hundreds have found the answer in Gemar Associates free preliminary survey.

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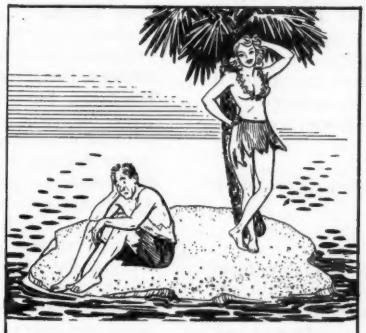

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Circle No. 151 on Reader Service Card

FIBREEN GIVES COMPLETE PROTECTION

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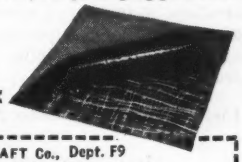

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Circle No. 152 on Reader Service Card

USEFUL BULLETINS • BOOKLETS • CATALOGS

The publications featured on these pages were written by experts. They are yours for the asking. To obtain these use the postcard bound into this issue.

Conveyors

Conveyor Buying Guide . . . Helpful buying information for users of conveyors is contained in a bulletin published by Speedways Conveyors, Inc. It tells how to determine correct conveyor type, how to select the proper model, various load conditions, and how to write specifications that will insure getting a unit correctly matched to the handling job. The bulletin covers the company's custom-built SpeedLIFT portable belt conveyors for loading, unloading, stacking, and boosting; SpeedBELT stationary belt conveyors for production and assembly lines; and PermaLIFT permanent floor-to-floor conveyors. Literature describing and illustrating these and special types of conveyors is enclosed with the bulletin.

Circle No. 153 on Reader Service Card for more information

Conveyor Case Studies . . . A series of material handling case studies has been made by field men of The Rapids-Standard Co., and are now available. These four-page folder field reports outline the problem and solution of specific applications. Results of new methods are given in statistical form. In many cases a floor-plan drawing is included. All reports show installation photographs with descriptive captions.

Circle No. 154 on Reader Service Card for more information

Flexible Roller Conveyors . . . A catalog, available from Berlin Chapman Co., discusses the company's Flex-Co adjustable roller conveyors designed for transporting goods around corners. They may be used in carloading, truck platforms, shipping rooms and warehouses. They are demountable into 8″ sections so they can be carried from one location to another. Curves are available for 45, 90, 180 or 360 degrees; the conveyor may be made up of any combination of these sections. They are adjustable in height from 22 to 38 ins.

Circle No. 155 on Reader Service Card for more information

Conveyors . . . A conveyor manual has been prepared by Anchor Steel & Conveyor Co. Its 56 pages are crammed with photos, engineering diagrams and descriptive text concerning its overhead trolley models, floor chain conveyors, metal belts, drag chain units, wooden slat conveyors and many others. Various pictorial presentations show the several types in use for transporting automobiles, buses, components for dipping and processing, prefabricated homes, motors, etc. In most cases, photos are accompanied by simplified line drawings. Easy-to-understand text. Send for your copy by mailing the enclosed card.

Circle No. 156 on Reader Service Card for more information

Pneumatic Conveying Systems . . . Crammed with engineering drawings, layouts and operating features is a lengthy folder, offered by Convair Corp. It deals with the company's complete line of pneumatic conveying equipment designed for handling all types of bulk materials. These operations may include loading, unloading, storage, weighing and batching, preparations and treatments, mixing, drying, packaging, etc. The activator, a cone-shaped receptacle of required capacity, allows the air to control the flow of the product into the conveying line. The air stream thus automatically and instantly determines its own saturation point. As the air is sufficient to carry the product, it is picked up and carried to its destination. According to the publication, materials ranging from 800 mesh to lumps up to 8″ in size and up to 350 lb. per cu. ft. may be handled.

Circle No. 157 on Reader Service Card for more information

Industrial Trucks, Accessories

Fork Trucks . . . Newspaper publishers and plant superintendents may be interested in a new Certified Job Study prepared by Towmotor Corp., based on savings through efficient handling of newsprint at The Fort Worth Star Telegram, Fort Worth, Texas. Outlined in detail are handling methods which resulted in many savings and the solution of acute storage problems for the user. According to the release, the use of Towmotor LT-44 fork truck with the standard Upender Accessory doubled the storage capacity of one warehouse, cutting the unit storage cost exactly in half. Daily tonnage unloaded has been increased from three carloads to seven, costly damage resulting from original flat storage has been considerably reduced, and the 8-man crew, formerly needed for the back-breaking work of unloading and handling newsprint, has been employed in more important jobs.

Circle No. 158 on Reader Service Card for more information

Seats for Industrial Trucks . . . This equipment is the subject of a profusely illustrated booklet issued by Milsco Mfg. Co. The seats are designed for most types of industrial powered rolling equipment, mobile cranes, tractors, and heavy-duty earthmoving equipment. Many models are described in complete detail, including compact ones where space is limited or where the equipment operates over rough terrain. Detailed specifications, operating and construction features accompany pictures of the various types.

Circle No. 159 on Reader Service Card for more information

Fork Truck . . . Bulletin 5124, issued by The Yale & Towne Mfg. Co., gives information on its pneumatic tired, 4000-lb.-capacity fork truck. It has a telescopic lift, 65 H.P. industrial engine, fluid drive and a rapid lifting speed. One page shows a large picture of the vehicle with all components

identified. Charts are designed to show capacity ratings based on uprights in a vertical position, and various mast heights as the forks are raised. On the specification page are paragraphs which detail such features as capacity, weight, speed, dimensions, hydraulic lift and tilt and other major construction designs.

Circle No. 160 on Reader Service Card for more information

Batteries . . . The K. W. Battery Co. has issued a catalog describing capacities, uses and specifications of its complete line of batteries for applications to car-lighting, air conditioning, industrial trucks, mine locomotives, marine and others. The publication is profusely illustrated with engineering drawings, charts, graphs and pictures. Easy-to-understand text complements and exhibits. Also included are sections on care and maintenance and charging information.

Circle No. 161 on Reader Service Card for more information

Hand Trucks

Hand Lift Trucks . . . Giving specifications, dimensions, capacities and mechanical details are two bulletins on hand lift trucks offered by Lift Trucks, Inc. The bulletin on Red Arrow single-stroke mechanical lift trucks describes six models; capacities range from 2500 to 5000 lb. These are designed in a standard size to fit all skids having 6½, 7½, 9½ and 11½" clearance with many widths and lengths. The folder on Hydromatic fluid ram lift trucks also covers six models with capacities up to 8000 lb. and the same skid specifications.

Circle No. 162 on Reader Service Card for more information

Hand Trucks . . . Bulletin No. 757 contains complete data on Hallowell Uni-Trucks, manufactured by Standard Pressed Steel Co. According to the release, these models have triple welded angle construction of the nose which is said to eliminate the danger of ends of side bars tearing loose. The frame is composed of steel channels with all-welded construction and a single handle. The hose is of heavy pressed steel, ribbed for strength. Six-in.-diameter wheels have ball bearings and rubber tires; other types are available.

Circle No. 163 on Reader Service Card for more information

Casters and Wheels

Casters . . . A two-color catalog on its line of casters is offered by the Midwest Precision Corp. Sections are devoted to forged wheel casters, V-grooved wheels, forged and steel-weld casters, in light, heavy-duty and extra heavy-duty types. Several pages give data on wheels made of semi-steel, plastic, solid rubber, drop forged and semi-pneumatic. Several dozen pictures are added to the text and specification charts. This factual publication should be helpful to those responsible for the use of casters and castered equipment in their plants.

Circle No. 164 on Reader Service Card for more information

Casters . . . To aid in choosing quickly the right caster for any type of service, Bond Foundry and Machine Co. has published a Caster Selector bulletin. It is to be used in conjunction with the Bond Catalog K-38. The bulletin is divided into various classifications by types of wheels: There are sections on semi-steel, solid rubber (soft and hard tread), vulcanized-on rubber (soft and hard tread), vulcanized-on oil resisting and celoron wheels. Each section is divided by load capacity, type of bearings, wheel diameters and overall height. Special columns covering companion rigid casters and catalog reference page numbers are included. Complete information is given on how to use the reference tables. One table gives the throw of any size and type of caster, which is used in determining the swivel radius required.

Circle No. 165 on Reader Service Card for more information

Industrial Wheels . . . Aluminum alloy steels with molded on rubber tires are the subject of a folder issued by Bronco Rubber Products Co. A large section is devoted to wheel specifications and replacement bearings; more than 60 different models of wheels are included. Another section describes in detail various types of bearings used, including roller, ball, tapered roller types, etc. According to the folder, all wheels with bearings are equipped with surface check fittings. Flush ball check in fitting head is said to prevent dirt and grit from entering the bearing. The literature is designed for all plants using industrial wheels on handling equipment.

Circle No. 166 on Reader Service Card for more information

Cranes, Hoists

Shovel Cranes . . . A complete and concise catalog on crawler and wheel-mounted shovel cranes is available from the Link-Belt Speeder Corp. Profusely illustrated with interesting on-the-spot photographs, it contains full information on these self-contained and self-propelled cranes, with bucket and shovel sizes from ⅜-yd. to three yards. Lifting capacities range from five to 60 tons. They are available in crawler and several types of wheel mountings and convertible to any of the standard front end attachments. Photos show the units handling curved steel members, rail, logs, bulk materials, coils, sheet steel and scrap. Each model is pictured. Complete engineering data.

Circle No. 167 on Reader Service Card for more information

Overhead Cranes . . . An eight-page, two-color bulletin, offered by Northern Engineering Works, describes the design and construction of its line of auxiliary overhead electric traveling cranes. Brief specifications are supplemented with illustrations of sub-assemblies, close-up views and installations in various types of service. This publication should be a valuable aid to plant personnel contemplating the use of overhead equipment.

Circle No. 168 on Reader Service Card for more information

Electric Hoist . . . The Finchbaugh Co. has released a pamphlet on its multi-purpose power hoist unit. It is designed to lift 500 lb. at 25 ft. per minute or 250 lb. at 50 ft. per minute. It may be used as a movable or stationary installation and is said to be able to pull or lift up to 200 ft. The unit is furnished complete with hangers and trolley wheels which are designed to fit all types of track. The

(Turn to page 94)

Circle No. 180 on Reader Service Card for more information

NEW

MODEL-H NOLAN

1-Man Car Door Opener

New safety and efficiency features now make the Nolan 1-Man Car Door Opener a more necessary labor-saving, money-saving help than ever before!

NEW improved balance assures automatic unlocking of pawl for chain stripping during door opening or closing operation.

NEW safety hook swings 180 degrees; locks positively in place before pulling; cannot become detached.

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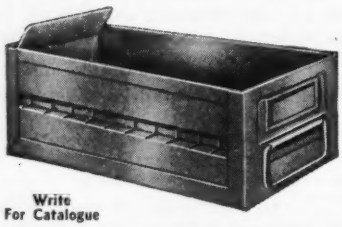

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96BHL	5½"	17¾"	4⅝"	$1.20
97BHL	8¼"	11¾"	4⅝"	$1.15
98HBL	8¼"	17¾"	4⅝"	$1.30

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Circle No. 181 on Reader Service Card for more information

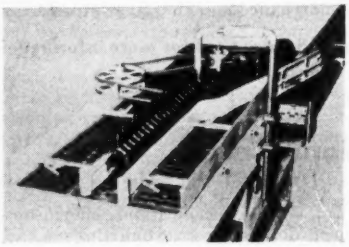
NEW PRODUCTS . . .

(Continued from page 79)

9'9½" wide by 5'1¾" deep. The carrier end of the dock board is 6' wide, increasing to 7' at its point of attachment to the dock. The entire unit is constructed of ¼" safety tread steel plate.

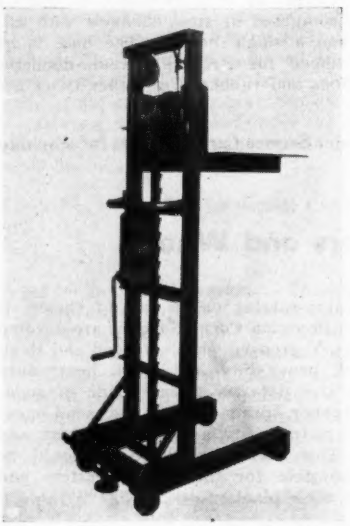
Circle No. 124 on Reader Service Card for more information

IMPROVED ATTACHMENT FOR UNSCRAMBLER—Island Equipment Corp. has announced the improvement of the Flask Discharge attachment for the unscrambling of panelled flasks, type F spout cans, or other types of flat sided units that must be conveyed in a certain position for proper labelling. The capacity with this unit depends upon the size of the container, but is said to be faster than an operator placing units on conveying line by hand. As shown in the illustration, the attachment is adjustable in a few moments for many sizes of units. It is made of 3½" x ¼" flat steel, with tubular adjustment on each side of guide lane for adjusting to suit the size of unit being unscrambled. This unit is in two sections and can be placed on any Styl-O-Matic Straightline Unscrambler now in the field, by any person.



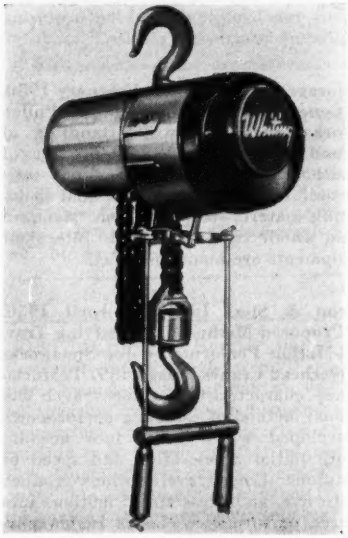
Circle No. 125 on Reader Service Card for more information

PORTABLE ELEVATORS—The illustration shows a Barrett "5" Hundred hand-operated portable elevator equipped with a cable safety device; the vertical saw-toothed member between the uprights. It is manufactured by the Barrett-Cravens Co. The saw teeth of this strip of heavy steel provide places of engagement for the safety pawl, which is mounted on the traveling platform. Automatic in action, this device prevents the platform and its load from dropping, in case the cable should break, by instantly locking the platform into position. This cable safety device has been added as optional equipment for Barrett "Hundred Line" portable elevators, which include three standard models of 500, 1000 and 2000 lb. capacity. Other safety features include: arc-welded construction of the structural members for long life; cable guards for the sheaves to prevent the cable from slipping off; and the floor lock for safe loading and unloading.



Circle No. 126 on Reader Service Card for more information

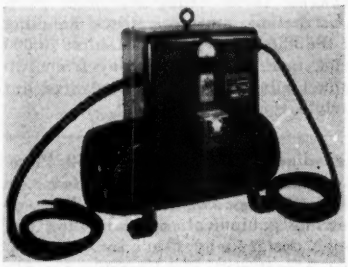
ELECTRIC CHAIN HOISTS—An improved line of electric roller-chain hoists has been developed by the Whiting Corp. The redesigned units use a



spring-set, shoe-type motor brake, in which the lining is bonded to the shoe. This is said to provide improved braking power and longer brake lift. The pull cord has been relocated at the center to eliminate any tendency of the hoist to tip when the control cord is pulled. In the two-ton hoists, a built-in hook provides 2½" reduction in headroom. The line includes ¼, ½, 1 and 2-ton capacity models.

Circle No. 127 on Reader Service Card

SINGLE CIRCUIT CHARGER—Motor Generator Corp. is manufacturing a single circuit charger Model 669-6-1 for charging a six-cell lead-acid

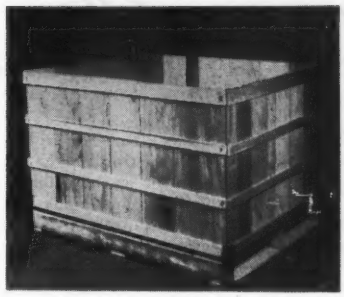


battery of up to 300 ampere-hour capacity, such as is used in the popular motorized hand lift trucks. It is built as an integral unit, is automatic in operation and is designed to completely charge batteries (lead-acid) in eight hours or less. To operate this charger, the operator inserts plug connection to battery, and then moves the time clock switch (synchronous motor-driven interval time switch) to the "stop" (charge position) which automatically energizes the magnetic coil of the motor starting switch, starting the charge.

Circle No. 128 on Reader Service Card

COLLAPSIBLE PALLET BOX which is designed for in-plant storage, handling of materials and shipping, has been developed by the Bigelow-Garvey Lumber Co. The container is light in weight but is said to be able to handle loads up to 3000 lb. The collapsible feature is made possible by a tight corner hinge. According to the manufacturer, the pallet box is easily attached to any standard pallet by means of four corner irons and a single steel strap, either flat or round. Tops can be furnished.

Circle No. 129 on Reader Service Card



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the answer to easy low cost handling of cases and cartons

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1 Choice of 3 HANDLES—single or double rubber-grip handles or tipped top-bar handle.

2 THREE WHEEL SIZES—6"—8"—10" sizes; all equipped with special ball-bearings.

3 Floor-saving, ZERO-PNEUMATIC tires that glide over bumps.

4 STAIR-CLIMBER—full-length bridge-truss construction.

5 FINGERTIP BALANCE adds extra maneuverability—extra safety to load.

Your Choice!

GRIP "A" Tipped top-bar handle.

GRIP "B" Single, rubber-grip handle.

GRIP "C" Double, rubber-grip handle.

Interchangeable Wheels 6"—8"—10" ZERO-PNEUMATIC

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Circle No. 182 on Reader Service Card for more information

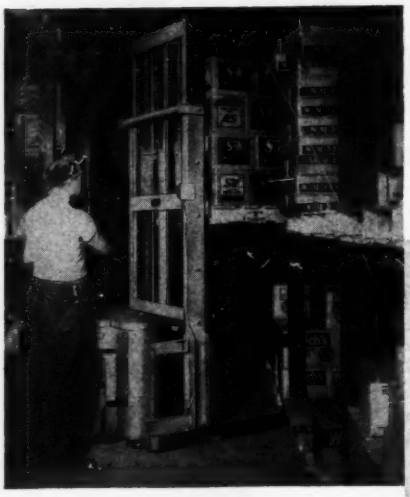
Flow DIGEST

The subject matter contained in each of the following digests was obtained from the magazine to which we give credit below.

Western Metals, December 1949. "Direct-Flow Speeds Production," page 24. An overhead conveyor system transports parts around a continuous finishing line. Results: finishing output upped 400 per cent with only a 25 per cent increase in manhours. The company: Price Building Specialties Co., a west coast manufacturer of bathroom accessories.

American Society of Mechanical Engineers. "Improvements Required in Air Cargo Ground Handling." Relation of cargo handling speed, economy and security; methods whereby ground handling improvements might be made. Other subjects covered: need for cargo flow studies and methods analysis, more speedy pickup and delivery, increased aircraft utilization.

Labor Shortage Ahead?



Prepare NOW To Save Manpower, Time, Space and Money by Mechanizing Your Material Handling Operations.

Detail of Balanced Handle Showing Fingertip Directional Controls, Lockable and Operable in Any Position of Handle.

Telescopic Straddle Type GO-GETTER tiering 48" x 48" pallets in narrow aisle of prominent food warehouse.

GO-GETTER **Electric Lift Trucks, High and Low Lifts for Pallets or Skids, have the features that insure maximum $avings.**

1. LIGHT WEIGHT—Can be used on upper floors of old buildings.
2. COMPACT and MANEUVERABLE —Illustration shows use in 5'8" aisle.
3. SAFE —Reduces frequency and severity of accidents and damage to goods.
4. FAST —One GO-GETTER lets one man do the work of three—in much less time.

Studies show that material handling wages average over 25% of total wage bill—in many plants it's 40%. GO-GETTERS can cut this by one-quarter over slow dangerous man-handling methods. Is it worth the small investment? You betcha.
For details and present low prices write or wire us or our representatives in your locality.

REVOLVATOR CO.
DESIGNERS AND MANUFACTURERS OF MATERIAL HANDLING EQUIPMENT

8739 Tonnele Ave. Established 1904 North Bergen, N. J.

Tool Engineer, April 1950. "Automation in Forging and Heat-Treating," page C30-1. How Oldsmobile's forge shop handles steel bars. Illustrated and described are equipment and operations for handling crankshafts during different processing phases.

Storage Battery Power, February 1950. "General Baking Co. Adopts Pallet-Fork Truck System to Handling of Food Products," page 7. A program of mechanizing handling operations incidental to receiving, storing and delivering material to production; standard and walkie trucks are used. Interplant shipments are made on pallets.

Iron & Steel Institute, April 1950. "Proposed Method of Specifying Travel-Motion Performance for Steelworks Overhead Cranes," page 439. Performance characteristics of 68 travel motions; method of assessing performance developed which takes into account both initial acceleration and speed of motions. Long travel motions grouped into five, and cross travel motions into three performance classes enable purchaser to classify his own cranes.

Paper of American Society of Mechanical Engineers. "Material Handling Economies in Pulp and Paper Mills." Handling methods involved in forest activities, transferring wood to railroad cars, unloading at mill, transfer from storage to mill, roll handling, of packages and handling auxiliary materials. Also covered: scope of handling methods and regional differences; management and economic aspects.

Brick & Clay Record, June 1950. "Sanford Brick & Tile Company Utilizes Tunnel Kiln Plant to Cut Brick Handlings." Reduced heavy manual effort and costs through conveyorization, between track rams, one-floor plant construction, and fork truck handling of the finished product. Results: 73,000 bricks are produced per day from two tunnel kilns and drier. Illustrated are various types of equipment.

Canadian Packaging, June 1950. "Bromo-Seltzer Puts New Carton on Market", page 20. Latest in filling and bottling equipment. Special filling machine designed by firm's own mechanical department is adjustable for filling five sizes of bottles at a maximum rate of 40 per minute. Machinery is air conditioned. Pictured: bottle filling, capping, labeling, cartoning, and placing of outer wrapping. New carton design is discussed.

Distribution Age, May, 1950. "Roll and Load For Economy", page 26. Gantry-curveyor-belt system used for unloading the holds of ships to waiting rail cars or highway trailers. The almost entirely automatic system includes fabric pocket-type elevators combined with curvable conveyors.

OPPORTUNITIES

Men wanted Jobs wanted Lines available

Rates: for "Positions Wanted" $4.00 minimum, limit 25 words. For all other classifications $4.50 minimum for 25 words, each additional word 15c; boldface type or all capitals, $7.50 minimum for 25 words, each additional word 20c; limit 50 words. Box address counts as five words. All insertions are payable in advance.

FOR SALE

FOR SALE: One Hopper Box Bag Conveyor, consisting of seven 20′ heavy steel frame sections mounted on 6″ ball bearing casters. Spur gear and pin connection, 24″ asphalt treated belt, running over 4″ rollers at 1′ intervals. Five Horsepower motor and speed reducer. Stored in excellent shape. Ideal for moving of heavy package material in warehouses or on docks. Priced to sell. The Washington Brick Co., Muirkirk, Maryland.

Used Equipment Wanted: 5000 used platform skids, iron bound, all sizes skate and roller conveyor wanted. J. S. Equipment Co., 436 Jefferson Street, Brooklyn, N. Y.

EQUIPMENT WANTED

DOLLARS FOR INFORMATION

We will pay 5% commission on all leads furnished to us, which result in our purchase of used handling equipment, such as fork trucks, pallet trucks, cranes, etc. Inform us of such equipment for sale and we will pay you commissions equal to 5% of purchase price if equipment is purchased.

A. & A. MACHINERY CORP.
1267 Flushing Ave. Brooklyn, N. Y.

PERSONNEL WANTED

Warehouse Manager for large wholesale distributor in East. Must be familiar with pallet operations. State full particulars, experience, background, references and salary expected. Reply to Box 9150, FLOW Magazine.

FORK TRUCK: Ambitious, energetic, livewire salesman for selling industrial trucks in Metropolitan N. Y. area. Experience desirable but not essential. Reply giving full details, experience and education. Box 9350, FLOW Magazine.

AGENT OR MANUFACTURER WANTED: Rights available for importing or manufacturing for sale fully patented English air hoist. Exclusive features of feather touch positioning and infinitely variable control have made it a success in foreign market. Capacities: 100 lbs., 300 lbs., load; 9 ft. max. lift. Extensive market potential. Exchange rate makes importation practical and favorable. Complete information available. Box 9250, FLOW Magazine.

LINES WANTED

Leading Eastern Manufacturers Representatives Material Handling Equipment desire to contact Crane and Monorail manufacturer for direct representation and sales in the greater New York area. Box 9450, FLOW Magazine.

POSITION WANTED

MATERIALS HANDLING EXPORT SALES ENGINEER AVAILABLE TO HANDLE FOREIGN ACTIVITIES, SURVEYS, SALES, EXPORT MANAGEMENT. EXPERIENCED SALESMAN, LANGUAGES, WIDE INDUSTRIAL FOLLOWING. WILL TRAVEL, RESIDE ABROAD. BOX 9350, FLOW MAGAZINE.

METALSMITHS
Stainless Steel
ENDLESS
BELTS

For transporting materials in Chemical, Food, Film, Ceramic, Candy, Process Industries, etc.

- Any width required, in one piece
- Welded endless • Polished to suit
- Camber and width controlled
- Material may be scraped from surface
- Doctor blade will keep belt clean

Let our engineers quote on your needs

FOR SOLID STEEL BELTS—CALL

METALSMITHS
Division of Orange Roller Bearing Co., Inc.
558 White Street, Orange, N. J.

Circle No. 184 on Reader Service Card

One Man Air Hoist

If you're thinking about a portable hoist as a burden-lifter in your plant . . . consider the Keller . . . it offers so many exclusive advantages.

It is so light in weight compared to other hoists of similar capacities . . . that one man can carry it, set it up and use it . . . without strain or injury. Just attach it to an air line and it goes to work.

Then, it has a fast lifting speed, 17 feet per minute at full load for the 500, 1000, and 2000-lb models. For 300-lb model, 75 feet per minute. Speed can be varied at will by the operator from creep to full capacity for either lifting or lowering.

Hoist is so durably built that it sets all-time low-cost records for maintenance.

New Air Hose Trolley for I-Beam Suspension

To keep the Air Hose conveniently suspended, Keller now offers an I-beam and tramrail hookup. The new accessory supports the Air Hose, permits it to travel smoothly, effortlessly following the hoist at the will of the operator.

Air Hoists, Hoist Trolleys, Air Hose and Hose Trolleys are available through Keller branch offices and direct from the factory.

KELLER
Pneumatic Tools

KELLER TOOL CO., GRAND HAVEN, MICH.
Circle No. 185 on Reader Service Card

publication contains numerous application photos, also detailed specifications and engineering data.

Circle No. 169 on Reader Service Card for more information

Containers

Steel Shop Boxes . . . The Union Metal Mfg. Co. has issued a bulletin on its steel shop boxes for handling various parts, from tiny television and electronic parts to large, heavy castings, forgings and weldments. Both stacking and nesting types, some with hopper fronts, are illustrated and described. Complete specifications are included. Other products manufactured by the company, also included in the bulletin, are tiering box trucks, parts assembly boxes, steel skids, skid boxes and pallets.

Circle No. 170 on Reader Service Card for more information

Drop-Bottom Skid Boxes . . . Bulletins offered by Monroe Auto Equipment Co. present details on its line of drop-bottom skid boxes. Gravity flow from the slanting floor of these containers keeps stampings, castings and other small parts accessible in the waist-high tray of the matching work stand. According to the manufacturer, these boxes can be used in the same way as regular skid boxes and are handled on or off separate work stands by lift trucks. They are available in six sizes and weights; work stands come with choice of trays for delivery of parts to the front, right or left. The publications include many on-the-spot views, detailed photos, charts and specifications.

Circle No. 171 on Reader Service Card for more information

Tractors

Tractor-Shovel . . . Job study No. 18 is available in booklet form from the Hough Payloader Co., manufacturers of tractor-shovels. The publication shows additional uses one company found for this equipment—as a rail car switching unit, for example. Also pictured and described are the standard applications for this equipment, handling various types of bulk material. The two-color booklet is crammed with richly-illustrated data in easy-to-understand form. The equipment has four-wheel drive; four speeds forward and four in reverse; speeds up to 24 MPH; and high dumping reach.

Circle No. 172 on Reader Service Card for more information

Accessories, Supplies, Specialized Equipment

Counting Devices . . . More than 50 standard counting devices for mechanical operation are covered in detail in a folder offered by Veeder-Root Inc. Each model is pictured together with explanatory text. Sections are devoted to predetermining counters, counting devices for electrical operation, and specially designed units. This handsome two-color publication is designed for operating and executive personnel whose plants use almost any kind of counting mechanism—on production machines, conveyors, or packaging lines.

Circle No. 173 on Reader Service Card for more information

Concrete Buckets . . . "Placing Concrete on Big Jobs" is the theme of a folder offered by Gar-Bro Mfg. Co. Twenty different models of concrete buckets ranging in capacity from ⅛ to 8 cu. yds. are described. Complete dimensions, specifications and data are included. A two-compartment model with individually air-operated gates having a total capacity of eight cu. yds. is shown in action.

Illustrated and described are construction and operating features, including double clamshell gate design, self-closing spring operated gates, discharge by remote control and center discharge for accurate placing. Two attachments, the accordion type collection hopper and the suspended steel sub-hopper with elephant trunk, are shown.

Circle No. 174 on Reader Service Card for more information

Bridge Ramps . . . A brochure, released by Penco Engineering Co., illustrates and describes its magnesium and steel bridge ramps. The former have capacities from 3,000 to 10,000 lb., while the steel models handle loads up to 15,000 lb. Both types feature all-welded construction. Construction features include positive locking device, car door stops, side guards, beveled edges and diamond safety tread. Close-up photos of components, operating pictures, specifications and general information.

Circle No. 175 on Reader Service Card for more information

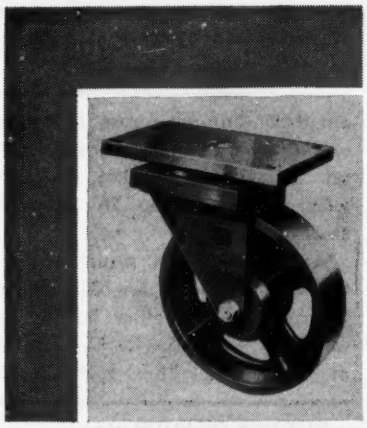
Mobile Hydraulic Feeding Table . . . A catalog page presents and describes the Lange-Lift, a caster-mounted hydraulic table designed for transportation or stationary feeding operations. It is manufactured by the Lange Aviation Corp. The equipment may be hand or power operated and is available with either parallelogram lifting action or vertical lift. It is conveniently rolled between work areas or may be permanently mounted on or in the floor at loading docks, inspection points or assembly stations. Photos show the unit transporting bar stock and feeding sheet stock at a press.

Circle No. 176 on Reader Service Card for more information

Wire Rope Fittings . . . Presenting its complete line of Electroline wire rope fittings, the Electroline Co. has released a handy pocket size catalog (32 pages). Generously illustrated with cut-away views to show how cable and strands are positively anchored, the publication includes a condensed analysis of the three main types of fittings—open end or clevis type, eye end and stud end types. Given are all dimensional specifications and simple illustrated instruction material covering installation.

Circle No. 177 on Reader Service Card for more information

Tube Cut-off Machine . . . A catalog page gives all factors on a portable abrasive wheel cut-off machine which is said to be able to cut a 12″ diameter stainless tube in about five minutes. The equipment is manufactured by Gilman Engineering & Mfg. Corp. According to the release, the machine



FREE
Manual

DARNELL
Casters & Wheels

If you want maximum floor protection, economy and efficiency Demand Darnell Dependability...Made to give an extra long life of satisfactory service . . . . .

DARNELL CORP LTD
LONG BEACH 4 CALIFORNIA

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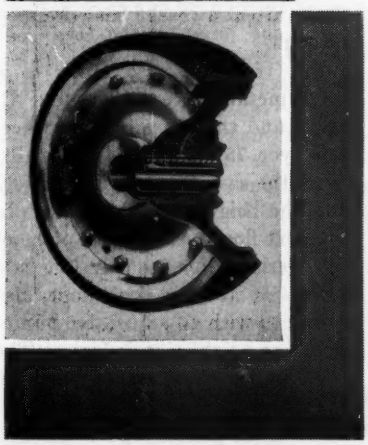
36 N CLINTON CHICAGO 6 ILL



Circle No. 186 on Reader Service Card

the machine cuts any tube from 4" to 24" in diameter to an accuracy within .010 of an inch. The catalog page gives details on how to operate the machine — pictures complement this data. Specifications and general operating information.

Circle No. 178 on Reader Service Card

Floor Resurfacing Material . . . The Stonhard Co. is offering a folder on its floor resurfacing material for floors, runways, trucking aisles, ramps, platforms, etc. According to the manufacturer, the product may be placed over concrete, brick, wood or composition. Photos show various installations and methods of using. Easy-to-understand text augments the illustrations. The resurfacing material is said to have non-skid and spark resistant characteristics.

Circle No. 179 on Reader Service Card

Use the postcard bound into this issue for more information on advertisements, New Products and Free Literature. Note the number to circle below each item.

NEXT MONTH

AN innovation in the distillery industry, where barrel rolling has been accepted practice for many years. Not only is this arduous task mechanized, but the solution is ingenious and offers ideas for handling similar products . . . One of Detroit's outstanding automobile plants contributes importantly to the fund of material handling knowledge in a FLOW article . . . Have you thought to any extent about the possibilities of up-to-date communications in connection with your power trucks that are traveling over fairly long distances? A special report tells you how truck running time was boosted from 20 per cent to 90 per cent of schedule time. The possibilities of communications are explored fully in relation to maintenance and departmental organization . . . How a floor-to-floor elevator broke a bottleneck. Watch for these and other articles next month's issue.

WHY TOLERATE BULK MATERIALS LOSSES? TURN THEM INTO GAINS WITH TOTE*

the sensational new system for

HANDLING BULK MATERIALS

TOTE* System is solving bulk materials handling problems for a variety of industries from coast to coast—whether the bulk product be flour, sugar, salt, carbon black, cement, paint pigment, powdered milk or a number of other items. Every day industries, whose products or raw ingredients can be shipped, handled and stored in bulk, are finding new, practical uses for the TOTE System.

WHAT IS THE TOTE *System*?

TOTE is a system for handling bulk products or materials in easy-to-handle 74 cu. ft. aluminum containers known as TOTE* bins. Special openings for filling and discharging contents are tightly sealed when bin is loaded thus eliminating common sources of contamination and deterioration. The bins together with simplified filling and discharging equipment comprise the TOTE System.

Processors Say:
"Tote System solves most of our problems of sanitation, deterioration, and plant maintenance. Sifting, dusting, spillage or spoilage—resulting from broken or leaking containers stop when TOTE takes over."

Plant Operators Say:
"TOTE bins handled by lift equipment have virtually solved warehousing problems, and have brought about lower inventories in every case. Direct economies resulting from eliminating bag costs and lower bulk prices in many instances, plus a savings in handling labor, puts TOTE at the top of every bulk product handler's 'must see' list."

Carriers Say:
"TOTE establishes an unprecedented ease of handling bulk products. By rail or truck, TOTE cuts handling time to a fraction, eliminates any special preparation of rolling stock, speeds turn-arounds, and reduces damage claims to the minimum. Tote really makes 'pay-loads' pay."

You, too, will say:
"I want to know more about TOTE."

WRITE FOR INFORMATIVE FOLDER

Without cost or obligation, you may also request a preliminary survey of your plant to be made by TOTE System's expert engineering staff. Write today!

*(Both Tote and Tote System, Reg. U. S. Pat. Off.)

Address your inquiry to Dept. F-2

TOTE SYSTEM, INC.
Beatrice, Nebr., U. S. A.

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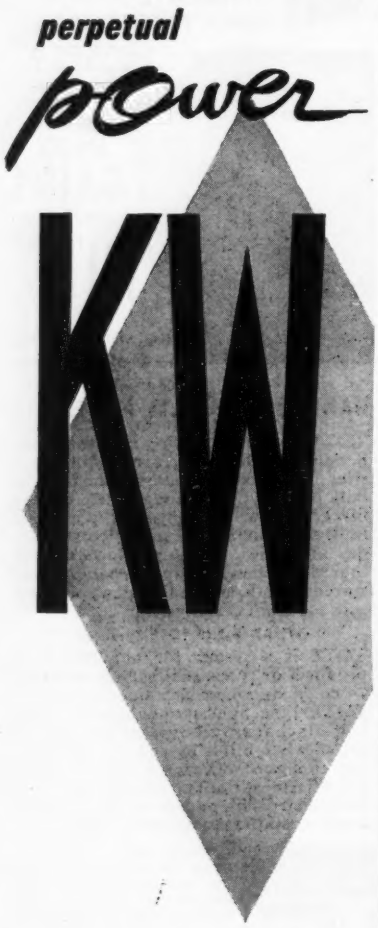

***Always* operating at *top* electrical efficiency—that's the KW Perpetual Power Plan!**

KW! Built to deliver *new*-battery performance under severe—and *continually* severe—conditions! That's why it's a favorite *railroad* battery—and why more materials handling men are welcoming this rugged KW!

There is no "price" battery in the KW line! KW sells, not batteries but peak electrical efficiency at a guaranteed-in-advance cost!

K. W. BATTERY COMPANY, INC.

3795 W. LINCOLN AVE. CHICAGO 15 — Foot of MONTAGUE ST. BROOKLYN 2

Circle No. 188 on Reader Service Card

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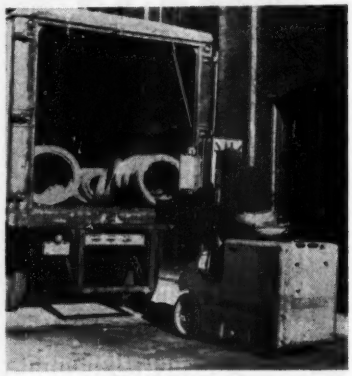
Gravity Conveyors . . .

(Continued from page 82)

angle iron bumper across the width of the door, likewise adjustable, is set to facilitate proper counterweighting according to different sizes of boxes.

An electric light signal system forestalls accidents. A bulb at the feed end of the gluer flashes on (and off), indicating to the packer at this station that the door is clear after a case has dropped through.

BUT ONE OF FOUR important jobs is shown here that this lift truck with a ram attachment performs regularly at this plant of a wire rope manufacturer. No truck dock is needed as the truck's attachment unloads 2000 lb. of the galavanized wire coils. This is an average load, which is spotted on a scale by the truck for weighing. In warehousing, the third job, the machine conserves space by high stacking. The truck's fourth important task is to move the coils from the warehouse in serving production. Sample of economy of operation: only four manhours are required in unloading and warehousing a 12-ton load of wire coils.—Courtesy Electric Industrial Truck Association.



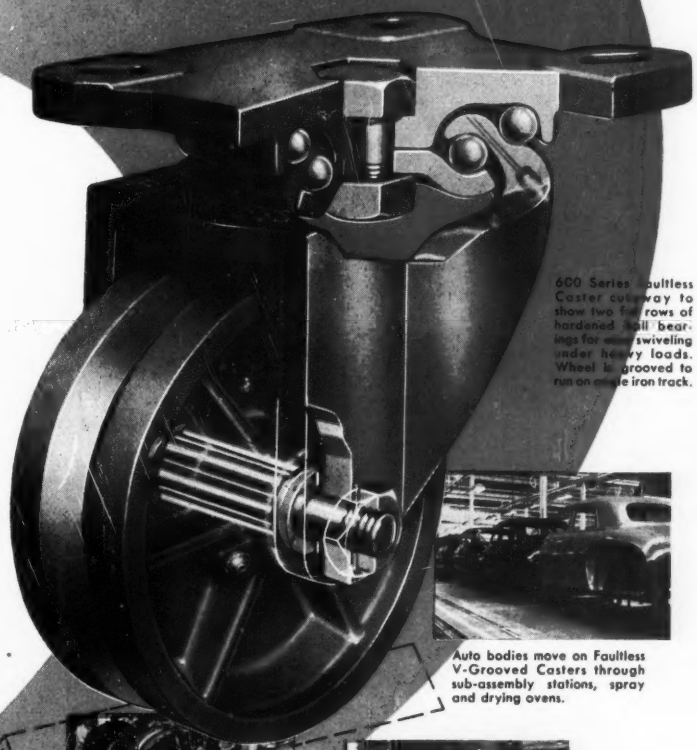
The traveling case drops to a sheet metal chute (about four ft. long), and then to a gravity wheel conveyor 75 ft. long. In this distance the case drops approximately half the height (about nine ft.) to the next floor. At the end point of the overhead line the traveling case arrives at another drop door, also equipped with an adjustable bumper bar and light signal device. The container is thus shunted to a 60 ft. gravity wheel section which delivers to the palletizing station.

"...castered equipment is responsible for the benefits which are gained"

says industrial authority

a time-tested way of cutting costs

with Faultless INDUSTRIAL CASTERS

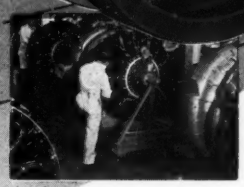


600 Series Faultless Caster cutaway to show two full rows of hardened ball bearings for easy swiveling under heavy loads. Wheel is grooved to run on angle iron track.

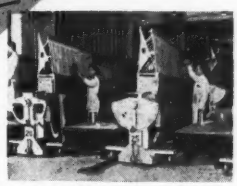
In thousands of plants Faultless Casters are demonstrating how a change in production methods can result in better material flow. Auto bodies that must pass through spraying and drying ovens at high temperatures would pose a real handling problem with ordinary methods. But, Faultless Caster equipped dollies roll the heavy assemblies along angle iron rails, in and out of ovens, and change direction on plain floor surfaces for final operation. Faultless fast, fluid production lines cut time in thousands of other industrial plants where handling costs had been excessive. In case after case, officials point out that "castered equipment is responsible for benefits which are gained" because they provide great flexibility of operations—production can be increased without any appreciable increase in existing facilities.

For information on how Faultless Casters can help solve *your* handling problem, write to

Auto bodies move on Faultless V-Grooved Casters through sub-assembly stations, spray and drying ovens.



Intricate engine assemblies are made on moving production line to save time and labor.



Cumbersome sub-assemblies are guided to stations by channels, then roll on plain floor surfaces.

FAULTLESS CASTER CORPORATION DEPT. F-9, EVANSVILLE 7, IND.

Branches in Atlanta, Boston, Chicago, Dallas, Detroit, Grand Rapids, High Point, Los Angeles, New York, St. Louis. Canada: Stratford, Ontario

YOUR PRODUCTION MANAGER CAN HELP YOU

Save $30 of every $100 in production costs

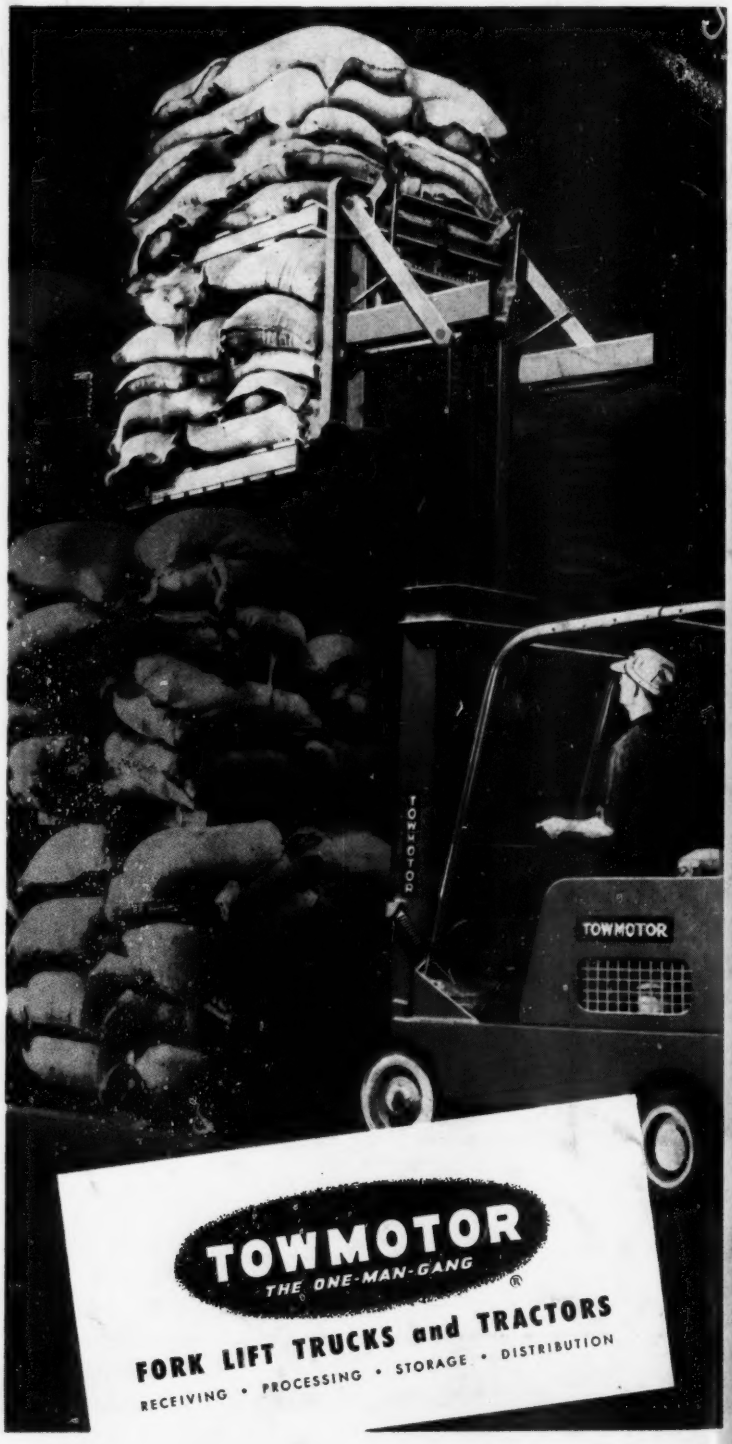
Industrial engineers have proved that 30% to 60% of total production payroll goes into materials handling. Cut these handling costs . . . and save at least $30 in every $100 of your production payroll.

MASS HANDLING IS THE ANSWER!

All over America, in large plants and small, Towmotor Fork Lift Trucks cut production costs by saving HOURS of handling time. Profits rise because production man-hours go into productive, not unproductive, output.

MASS HANDLING IS THE ANSWER!

Ten Towmotor models, many special attachments, cut handling time on loads from 1,500 to 15,000 lbs. Learn how Towmotor can lower production costs in YOUR plant. Write for "Handling Materials Illustrated." TOWMOTOR CORPORATION, Div. 8, 1226 E. 152nd St., Cleveland 10, Ohio. Representatives in all principal cities in U. S. and Canada.

Mass Handling Is the Answer!

The Towmotor 30-minute movie, *"The One Man Gang,"* can be shown to executive groups in your office. See how efficient materials handling cuts production costs for leading industries. Write for details.